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SOCIAL ENGLAND

ILLUSTRATED EDITION. VOL VI.—SECTION I

FROM THE BATTLE OF WATERLOO TO THE DEATH OF LORD PALMERSTON

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LONDON BRIDGE ON THE NIGHT OF THE
MARRIAGE OF THE PRINCE OF WALES, MARCH 10TH, 1863.

(By permission, from the painting by W. Holman Hunt at the University Galleries, Oxford.)

SOCIAL ENGLAND

A Record of the Progress of the People

In Religion, Laws, Learning, Arts, Industry, Commerce, Science, Literature and Manners, from the Earliest Times to the Present Day

EDITED BY

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VOLUME VI. SECTION I

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ULYSSES DERIDING POLYPHEMUS, BY J. M. W. TURNER, R.A. . *To face* 1

Ulysses' galley putting off at sunrise; Polyphemus above, tearing his hair and convulsed with rage. The fire on the shore is that in which Ulysses heated the staff with which he and his comrades put out the giant's eyes in his sleep.

LORD LIVERPOOL, BY JOHN HOPPNER, R.A. 3

LORD CASTLEREAGH, BY SIR T. LAWRENCE, P.R.A. 4

As he succeeded to the marquisate of Londonderry only the year before his death, he is usually known by the courtesy title which he bore during the greatest part of his career.

THE CATO STREET CONSPIRATORS SURPRISED 5

February 3, 1820. Cruikshank visited the place in order to draw the interior, and drew the fight from a description.

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FUNERAL OF THE CONSTITUTION, 1829 11

An ultra-Protestant view of the possible results of Catholic Emancipation.

WILLIAM IV. (a water-colour drawing by an unknown artist) . . 13

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LORD COCHRANE, AFTERWARDS EARL OF DUNDONALD 19

This painting is now in the possession of the family. A French refugee, Captain De Bérenger, whom Cochrane was about to employ as instructor in rifle practice on his own ship in 1814, personated a British aide-de-camp early in 1814, and spread the false report that Bonaparte was killed, and the allies were marching on Paris. The Funds, of course, rose at once, and fell again on the detection of the falsehood, and one of Cochrane's uncles, named Johnstone, who was apparently privy to De Bérenger's action, cleared a large sum. Cochrane, though undoubtedly innocent, was prosecuted with De Bérenger and Johnstone, imprisoned, and expelled from the Navy. He aggravated his alleged offence by escaping from prison, and, though his treatment evoked violent protests, it was not until 1832 that he was pardoned and restored to his rank. Meantime, he had aided Peru to free herself from Spain, and taken part in the Greek war of libération.

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MODEL OF H.M.S. *ARIADNE* 24

A sailing frigate, built in 1816, and sold out of the service in 1841. Captain Marryat, the novelist, commanded her in 1828–1830, and is believed to have supervised the construction of this model. She was 511 tons, 121 ft. long, and 31 ft. beam. She carried 20 32-pounder guns, six 18-pounders, two 9-pounders, and 20 carronades on the upper deck, and about 180 men.

MEN-OF-WAR IN PORT, BY W. ANDERSON 25

The artist was born in 1757, and died in 1837.

MRS. ELIZABETH FRY, AFTER C. R. LESLIE, R.A. 29

A miniature from a picture by Leslie.

DR. MARTIN JOSEPH ROUTH, AFTER H. W. PICKERSGILL, R.A. . . 31

President of Magdalen College, Oxford, from 1791 till his death in 1855 at the age of 99; a great ecclesiastical scholar, and editor of works of the Fathers of the Church. The best account of him for the "general reader" is in Dean Burgon's "Lives of Twelve Good Men." This painting is in the hall at Magdalen College, Oxford.

DR. THOMAS ARNOLD, BY WILLIAM BEHNES 32

The bust was executed in 1849. Arnold is best known as head master of Rugby from 1828 to his death in 1842, during which time he initiated a revolution in English public school education and ethics, more especially in the relation between masters and boys; but he is also of great importance as one of the founders of the Broad Church party within the Establishment (*see* text).

LORD BYRON, BY THOMAS PHILLIPS, R.A. 34

The portrait was sent by the poet to Colonel Wildman as a present, with the expressed hope that it might always hang in the large drawing room of Newstead Abbey, and it is still placed there. Newstead Abbey was sold in 1818 to Colonel Wildman, from whose trustees it passed to the family of its present owners, the Misses Webb. It was originally built in 1270, and was granted at the Dissolution to the founder of the Byron family.

PERCY BYSSHE SHELLEY, BY MISS AMELIA CURRAN 35

Painted at Rome in 1819, three years before his death, and at the age of 27; unfinished.

JOHN KEATS, BY WILLIAM HILTON, R.A. 37

Based on a miniature by Joseph Severn, probably of 1820 or 1821.

CHARLES AND MARY LAMB, BY FRANCIS STEPHEN CAREY 39

Painted in 1834. Mary Lamb, as is well known, in a sudden fit of insanity killed her invalid mother in 1796, and her brother devoted his life to the care of her thenceforward. He, however, died in 1834, she in 1847.

THOMAS DE QUINCEY, BY SIR JOHN WATSON GORDON, R.A. . . . 40

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SIR WALTER SCOTT, BY SIR HENRY RAEBURN, R.A. 45

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MARIA EDGEWORTH 47

Mr. Leslie Stephen (*Dictionary of National Biography*) states that no portrait of her was ever taken, but this engraving, which is accepted by the authorities of the Department of Prints and Drawings in the British Museum, may possibly be from some unauthorised sketch.

J. M. W. TURNER, R.A., BY CHARLES TURNER 49

A drawing in coloured chalks.

THE BAY OF BAIAE: APOLLO AND THE SIBYL, BY J. M. W. TURNER, R.A. 51

The legend is that the Sibyl of Cumae, whom Apollo loved, obtained from him the power to live as many years as the grains of sand which she held in her hands, but as she forgot to ask for perpetual youth, she wasted away till she became a mere voice. She dwelt in a cavern between Lake Avernus and this bay, one of the most beautiful in Italy or the world. The castle of Baiae is on the right, Pozzuoli (Puteoli) on the left. The picture was exhibited at the Royal Academy in 1823.

LANDSCAPE, WITH JAQUES AND THE WOUNDED STAG, BY SIR GEORGE BEAUMONT 53

Shakespeare, "As You Like It," Act iv., Scene 2. Painted in 1819.

THE VALLEY FARM, BY JOHN CONSTABLE, R.A. 55

A farmhouse on the banks of the Stour, near East Bergholt, Suffolk. Exhibited at the Royal Academy in 1835.

LANDSCAPE WITH FIGURES, BY JOHN LINNELL 59

"It marks the transition from his middle to his later period" (A. T. Story, *Magazine of Art*, 1893). In that year it formed part of the collection of Mr. W. Y. Baker, of Streatham Hill.

THE PASSAGE OF THE RED SEA, BY FRANCIS DANBY, R.A. . . . 61

THE GATEWAY OF THE GREAT TEMPLE, BAALBEC, BY D. ROBERTS, R.A. 63

THE PRINCIPAL CHARACTERS OF THE "MERRY WIVES OF WINDSOR," BY C. R. LESLIE, R.A. 65

The scene is not in the play, but is alluded to in Act i., Scene 2 as taking place in Page's house: "There's pippins and cheese to come." Page at the table offering a cup of sack to Slender; Falstaff joking with the merry wives, while Bardolph talks to Page's son. Sweet Anne Page sits beside her wooer; Justice Shallow and Parson Hugh at the foot of the table observe Slender admiringly. The characters are admirably conceived. (*Catalogue* of the South Kensington Collection.) The picture was exhibited at the Royal Academy in 1838.

MOUNT ST. MICHAEL, NORMANDY, BY R. P. BONINGTON . . . 67

YOUTH ON THE PROW AND PLEASURE AT THE HELM, BY WILLIAM ETTY, R.A. 69

Exhibited at the Royal Academy in 1832; Vernon Bequest.

SUNSET OFF HASTINGS, BY COPLEY FIELDING 70

"A brilliant study of sky and clouds and light." Bequeathed with other paintings by Mrs. Carr.

THE SIGNBOARD OF THE "ROYAL OAK," BY DAVID COX . . . 71

Painted, according to tradition, to pay the artist's bill at the village inn at Bettws-y-Coed, North Wales. The inn is now a leading hotel of a popular tourist resort, and the sign hangs inside the hall.

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ITALIAN OPERA PLAYBILL, KING'S THEATRE 73

Boxes and stalls could only be had when not required by subscribers. Very few bills for strictly operatic performances are preserved, probably because, for the reasons mentioned in the text, not many were issued. A number of bills, however, still exist, announcing the annual benefits of the manager, "the only night of the season at playhouse prices," when the performances included comedy as well as operatic selections. In Lent oratorios, or selections from oratorios, were performed at this theatre and Drury Lane. The theatre was on the site of the present His Majesty's Theatre, in the Haymarket.

DR. JOHN PLAYFAIR, BY SIR HENRY RAEBURN, R.A. 77

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A drawing in chalks. Lyell died in 1875.

ADAM SEDGWICK, BY T. PHILLIPS, R.A. 81

SIR RODERICK IMPEY MURCHISON, BY STEPHEN PEARCE . . . 83

HUGH MILLER, BY WILLIAM BONNER, R.S.A. 85

In the possession of relatives of the subject.

DAVY SAFETY LAMPS 87

The first on the left is the original experimental lamp; the next three are improvements. In the fourth, an uncommon form, a lens is inserted. The safety depends on the cooling action of the wire gauze, which prevents the flame from igniting the explosive mixture of gas and air outside. A lamp based on the same principle, but consisting of a glass cylinder cased in wire gauze, to which air is admitted by a perforated metal ring underneath, was invented almost at the same time by George Stephenson, and is shown on the extreme right. Reservoirs of the Davy lamp are also shown.

SIR HUMPHRY DAVY, BY SIR T. LAWRENCE, P.R.A. 88

UNIVERSITY COLLEGE, GOWER STREET, LONDON 93

Now a "constituent college" of the remodelled University of London. The front is 400 ft. long.

SIR ASTLEY COOPER, F.R.S., AFTER SIR T. LAWRENCE 94

THE JACQUARD APPARATUS 98

A model of a loom with a Jacquard apparatus attached, its function being to raise the set of "healds" through which the warp threads pass in the order required for weaving complicated patterns. Briefly, the "griffe" or frame at the top of the machine moves up and down, and has bars to catch the hooks below it, which raise the healds or vertical threads, terminated by leaden weights, which in their turn lift the various warp threads. Which hooks shall be left in position to be thus raised is determined ultimately by the perforated cards passing over the "prism" near the top of the machine on the spectator's left. There is one card for each "pick" of weft in the pattern. At each upward movement of the griffe the prism makes a quarter turn and presents a new card to the row of spring needles opposite to it. Each card in turn is forced against these needles, some of which pass through the holes in its face into holes drilled in the prism to receive them. But the non-perforated card forces back some of the needles, and as each of the hooks has its shaft passed through a loop in the centre of the needle, the hooks not needed to be raised are pushed out of the way of being caught by the griffe. The machine is weaving a narrow ribbon.

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PORTRAIT OF J. M. JACQUARD, WOVEN BY HIS OWN MACHINE . . 99

RICHARD ROBERTS, AFTER RIPPINGILLE 101

MAP OF PART OF OXFORDSHIRE AND BERKSHIRE IN 1797 . . 104, 105

Showing how large a part of the country round Oxford was still unenclosed. In the whole map of which this is a portion, upwards of twenty open fields are shown, besides heath or marsh lands, such as Ensham Heath and Otmoor. The last of the common fields is mentioned as surviving into the 'fifties by Maine, *Ancient Law*.

MODEL OF THE REV. PATRICK BELL'S REAPING MACHINE, 1826 . . 107

The cutting was done by a series of double-edged shears, the mowing blade in each pair actuated by a common rod driven by a crank worked by the travelling wheels. Cutting blades were afterwards substituted in America. The machine was propelled by two horses walking behind attached to a pole. It is said to have cut 12 acres a day.

THOMAS COKE OF HOLKHAM, BY THOMAS GAINSBOROUGH . . . 109

He was created Earl of Leicester in 1837.

HOLKHAM HALL, NORFOLK 111

The house, two miles from Wells, was begun in 1734, and is described by Mr. Walter Rye (*Tourist's Guide to Norfolk*) as "one of the ugliest, if most commodious, in the three kingdoms." It is said to have been built after a plan by Palladio. The front is 344 ft. long. It is in a beautiful park of 3,500 acres, and contains a fine collection of paintings.

REAPING MACHINE INVENTED BY JAMES SMITH OF DEANSTON . . 113

The cutter, 5 ft. 4 in. in diameter, is seen projecting under the drum, which was rotated with it by the action of the driving wheels. The cutting and driving mechanism could be disconnected, and the former arranged to revolve either way, according as it was desired to throw the corn to the right or left. The cutter made 128 revolutions per minute when the machine was going $2\frac{3}{4}$ miles an hour. It could cut a quarter of an acre without requiring to be sharpened, and could be raised or adjusted to cut at different heights. An elaborate description is given in the *Farmer's Magazine* (Edinburgh), 1816.

THE SCALES OF JUSTICE REVERSED 117

Published 1815. The loaf, price 1s. 6d., is outweighed by the taxes, the imps which have crushed John Bull. The landed interest dances with joy at the repeal of the property tax, shown as an imp flying away.

WILLIAM COBBETT 120

FORTUNES MADE BY STEAM, 1825 123

The *Annual Register*, 1825, page 2, mentions a list of 276 companies of various sorts formed in England in 1824 and the first months of 1825, with a total capital of £174,114,050. "Poyais," on the Mosquito coast of Central America, was frequently the hunting-ground of promoters at this time. A Poyais bond for £100, part of a loan of £200,000 to "His Serene Highness Gregor I., Cacique of the Poyais Indians," whose real name was Mac Gregor, is preserved in the British Museum, and dates from 1823. An attempt was made to found a colony in that year, and failed, but its repetition was advocated as late as 1838.

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"Le Poyais" Company seems to have been what would now be called an "exploration company" concerned with the region. A caricature of 1828 also refers to it. The actual crisis came in December, 1825, when the bankers, having locked up their funds in securities they could not realise, were unable to help the speculators, who were in like case. Four London banks failed on December 5 and 6, and 67 country banks shortly afterwards. The crisis was mitigated by issue of £1 and £2 notes, and by the coinage of sovereigns.

FRANCIS PLACE, BY DANIEL MACLISE, R.A. 125

THE MASSACRE OF PETERLOO, OR BRITONS STRIKE HOME . *to face* 126

By George Cruikshank; published in 1819, and representing the charge of the Manchester Yeomanry on the unarmed populace in St. Peter's Fields, Manchester. The yeomanry are depicted as butchers armed with axes reeking with the blood of the victims.

COINS OF GEORGE IV. AND WILLIAM IV. 126, 127

The double sovereign bears the initials of the Hon. W. W. Pole, afterwards Lord Mornington, and of J. B. Merlen and Benedetto Pistrucci, who made the dies. Merlen also designed the reverse of the so-called "lion shilling." The groat, or 4d. piece, which had been discontinued except as "Maundy Money" since Charles I., was said to have been revived at the instance of Joseph Hume, M.P., the well-known financial reformer, and was therefore known as a "joey." Its issue was discontinued in 1856, as it was too near the threepenny in value, but it remained current till 1887.

QUEEN CAROLINE'S MATRIMONIAL LADDER, BY GEORGE CRUIKSHANK 128, 129

A series of drawings printed on a piece of cardboard, which folds over in the centre so as to protect them. For the most part they explain themselves. The Prince Regent's drunkenness, shown in "Qualification," the first drawing of the series, and, with his preference for other ladies, in "Alteration," was notorious. In "Declaration" he appears to be showing an empty purse to the king, who had refused him assistance unless he would marry. The subject was much more elaborately treated by the same artist in a pamphlet bearing a similar title, which exhibits, amongst other incidents, the efforts of George III. to protect the princess, the sympathy of Princess Charlotte, and the base devices resorted to by the Prince Regent to obtain evidence of his wife's unfaithfulness.

FASHIONS OF 1819, 1822, 1825, 1827 . . . . . 130, 131

These are fashion plates, supplied by dressmakers to a magazine for ladies. The morning dress, 1819, is of cambric muslin, with a lace flounce at bottom, surmounted by rows of letting-in lace, and with lace cuffs. The headdress is described as a "Cornette à la Vallière." Limerick gloves and white kid shoes completed the costume. The walking-dress of 1819 is a grey (or lavender) Kerseymere pelisse, lined with white sarsnet; the waist is described as "rather long;" the trimming, epaulettes, and cuffs are of ruby velvet; the bonnet is of the same material, intermixed with levantine, and its trimming "adds much softness to the countenance." These two costumes are for winter. The walking dress of 1822 (a spring dress) is of French grey poplin ornamented with chenille on the bust in a scroll pattern so as to form a "stomacher à l'antique." The pelisse is between a peach blossom and a red lilac lutestring in colour, tied up with bows of lutestring. The bonnet (like the skirt) is of "gros de Naples," trimmed with amber gauze. The evening dress of 1825 (autumn) is of citron-coloured silk barège, the turban of the same

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colour trimmed with beads; the bracelet studded with rubies, the ornaments pearl and turquoise. The promenade dress of October, 1827, is of Egyptian *bleu du Cape*, with leg-of-mutton sleeves; the epaulettes edged with golden satin; the bonnet of floss silk, with a colour graduated from deep orange to pale straw, and lined with pale pink satin; the strings are "*en bride*" (bridlewise); the veil of embroidered lace; the costume is completed by boots of corded silk, with a narrow fringe at top and yellow gloves. The elaboration of these dresses, as in all fashion plates, is no doubt greater than that of those usually worn.

LITERARY LADIES, BY DANIEL MACLISE, R.A. 135

From the spectator's left, and round the front of the table, the order is: Mrs. Hall, on the left of the negro servant; Letitia Elizabeth Landon, with face slightly turned away; Lady Morgan, with the dog; Mrs. Norton, at the head of the table; the Countess of Blessington by her; Miss Jane Porter, authoress of *Thaddeus of Warsaw*, stirring her coffee; Miss Harriet Martineau; Miss Mary Russell Mitford, next to Mrs. Hall. The ladies by the glass are unnamed.

REGENT STREET, WITH THE QUADRANT COLONNADE 136

The colonnade was found to make the shops beneath it too dark for comfort, and to interfere with their trade by attracting undesirable loungers; hence its removal in 1848.

WEST LONDON IN 1832 137

The St. George's Cemetery still exists, though closed long ago. The houses seem hardly to go west of Edgware Road.

SPECIFICATION DRAWINGS FOR HANSOM'S CAB, 1834 139

Joseph Hansom, an architect, of Hinckley, Leicestershire, designed to increase the size of the wheels of carriages and bring the body nearer the ground, so as to facilitate entering or leaving it, and apply the tractive force to the best advantage. The wheels of his cab were fitted into the sides—not on to a continuous axle—and the shafts were level with their centres and with the main body of the carriage. A more novel type of vehicle had the body suspended within huge rings serving as wheels, with which it was connected by friction rollers, and it was entered sideways and through one of the wheels. A wagon with detachable body was another of Hansom's inventions.

MASTER DOGBERRY, THE PARISH WATCHMAN 140

FRANCIS HORNER, BY SIR HENRY RAEBURN, R.A. 143

THOMAS CHALMERS, BY KENNETH MACLEAY, R.S.A. 145

A PARLIAMENTARY GAME OF SHUTTLECOCK 147

O'Connell attempted to take his seat as M.P. for Clare on May 15, 1829. He had been elected before the passing of the Catholic Relief Act, but he claimed to substitute for the Oath of Supremacy the form prescribed by that Act. On the Speaker's ruling he withdrew, but was heard at the Bar of the House in support of his claim on May 18. He was excluded by 190 votes to 116, but was re-elected for Clare without opposition, and being thus entitled to the benefit of the Act, took his seat on February 4, 1830. The Marquis of Anglesey, who had lost his leg at Waterloo, had been Lord Lieutenant, and had been recalled in January, 1829, for writing a letter to the Romanist Archbishop of Armagh, urging that the Duke of Wellington's suggestion that the agitation for Catholic relief should be postponed ought not to be entertained, but that "all constitutional means should be used to forward the cause."

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THE FREEHOLDER BETWIXT PRIEST AND LANDLORD 149

THE HOUSES OF PARLIAMENT IN 1821 151

The House of Commons sat in the chapel dedicated to St. Stephen, of the old Westminster Palace, and made over to them under Edward VI.; the House of Lords in an oblong chamber, formed out of an ancient building long known as the Court of Requests. Between the two was the Painted Chamber. The House of Commons was repaired and refitted by Sir Christopher Wren. Thornbury, *Old and New London*, III., 499.

A PROTEST AGAINST EMANCIPATION 153

The Duke of Wellington, with Lords St. Vincent, Penshurst, and Wynford, joined in a protest against the West India Slavery [Abolition] Bill, published in *The Times*, September 3, 1833. Their first reason was that the slaves were "not prepared by a previous course of education, of religious instruction, or of training to habits of industry, or of social intercourse," for their new position.

IRELAND'S BIG BEGGARMAN 154

Besides the ordinary subscription of a guinea a year to the Catholic Association, founded in 1823 for the promotion of Catholic Emancipation, a subscription of not less than one penny per week entitled to membership. This "Catholic Rent" (O'Connell's device), for the last week of 1824, reached £1,032, and for the week after O'Connell's election for Clare, July, 1828, £2,704. The caricature doubtless refers to a proposal to revive this rent in support of an agitation for Repeal of the Union, and to a testimonial from O'Connell's admirers.

AN APPROACHING CONGRESS 155

Ridiculing the *régimes* lately set up in Spain, Portugal, Greece, and Brazil, and the efforts of the Powers to control and maintain them. The doll with which the Queen of Portugal is playing may possibly be Lord Howard de Walden and Seaford, who had been sent out as envoy extraordinary and Minister Plenipotentiary three weeks before the date (December 16, 1833) assigned to the print, but who was only 34; *or* Lord William Russell, who had been sent on a special mission to Portugal in the previous August. There seems to be no specific political allusion in the pill or the birch rod for Don Pedro, or the sop for King Otho.

SIR ROBERT PEEL, BY JOHN LINNELL 157

THOMAS DRUMMOND 159

Under-Secretary for Ireland 1833–1840, when he died of overwork. He is remembered for his conciliation of O'Connell by governing Ireland in the interest of the Irish, and for his famous aphorism that "property has its duties as well as its rights."

CHARTIST ATTACK ON THE WESTGATE INN, NEWPORT, 1839. . . 160

The old building is shown; the present one was erected about 1859. John Frost, who had been a magistrate for Newport, Monmouthshire, and mayor of the borough, was struck off the Commission of the Peace in 1839 for using seditious language. On November 4, 1839, he marched on Newport by night, at the head of a body of armed miners, to release certain Chartist prisoners, stop the mail coach, and so give the signal for a general rising in Birmingham and the North. Two other divisions of miners failed to arrive, and delayed his advance till after daybreak. His force attacked the Westgate Inn, where the mayor had been all night with the magistrates, and which was defended by special constables and by 30 soldiers. These fired on the

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assailants and dispersed them with some loss of life. The ringleaders were tried and sentenced to death, but the sentence was commuted to transportation. Frost was released in 1854, and received a free pardon in 1856. He died in 1877.

RELICS OF THE CHARTIST RIOT AT NEWPORT 161

The inn door and windows were broken in with mandrils and pikes. Some of the rioters carried scythe blades fixed on sticks, others bludgeons. The bow windows enabled the troops to deliver a raking fire on the rioters, which dispersed them at once. The mayor was slightly wounded, it was thought by slugs.

JOHN GEORGE LAMBTON, FIRST LORD DURHAM, BY SIR T. LAWRENCE 162

"A MODERN CERES": PEEL'S CORN LAW OF 1842 165

Punch, February 26, 1842. The horn of plenty is padlocked. Under the "sliding scale," the duty fell as the price of wheat rose, and corn was imported and warehoused until the state of the market encouraged the holders to enter it for home consumption. The fluctuations in price were therefore intensified. Peel's Act attempted (ineffectually) to meet this defect.

THE FREE TRADE HARVEST HOME (*Punch*, May 30, 1846) . . . 167

UNIFORMS OF 86TH REGT., 1842, AND 19TH REGT., 1848 . *to face* 168

The Nineteenth or First Yorkshire North Riding Regiment, formed in 1688, served in the War of Succession, the Seven Years' War, at the capture of Seringapatam in 1796, and in the Crimea. The Eighty-Sixth or Royal County Down Regiment was raised in 1793, originally in Shropshire, and served in the Mahratta War and at the capture of Mauritius. It became the second battalion of the Royal Irish Rifles under Mr. Cardwell's scheme.

UNIFORMS OF THE SEVENTH HUSSARS AND NINTH LANCERS . 170, 171

The Ninth or Queen's Own Lancers, so called after Queen Adelaide, was raised in Ireland in 1813, served against the Pretender and in the Irish Rebellion, in the Peninsular War, the Sikh War, and the Indian Mutiny. The 7th Hussars, raised in 1689, were at Dettingen, Waterloo, and Balaklava.

"BROWN BESS" AND MINIÉ RIFLES 173

"Brown Bess" was the old smooth-bore flintlock, so-called, according to Murray's *New English Dictionary*, from its brown walnut stock. Rifles were used in the British army as early as 1680, when each troop of Life Guards had eight rifled carbines; in 1800 the 95th regt., afterwards the Rifle Brigade, was armed with them. The Minié rifle, the invention of Captain Minié of the French army, about 1837, was the first in which the bullet was expanded by the explosion to fit the rifling; the device was improved in the Enfield, adopted in the British army in 1853.

THE SIKH WAR: BATTLE OF FEROZESHAH 174

The Sikhs, after the battle of Moodkee, retired to their entrenched camp at Ferozeshah, some twelve miles off. The British troops from Moodkee, together with those from the British post of Ferozepore, arrived before it at 3 p.m. on December 21, 1845, and, despite their considerable fatigue, engaged at once. They drove the Sikhs from their guns before nightfall, bivouacked before the camp, and though exposed to a heavy artillery fire in the night renewed the attack in the morning and captured the guns. Sikh reinforcements opened artillery fire after the battle was over, but the Sikhs decided to abandon all attempt at recovering the post.

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THE NAVY IN TRANSITION 179

The "Fantôme" was an 18-gun brig of 726 tons, designed by Sir W. Symonds, and launched about 1838, carrying 18 32-pounders and 148 officers and men. The "Himalaya" (p. 182) was built in 1853 for the P. & O. Co., but bought as a troopship during the Crimean war, and constantly used in that capacity for some twenty years afterwards, making regular passages between England and Canada while troops were stationed in the Dominion. Her speed was high for the time (13½ knots); her consumption of coal, however, would have precluded her profitable employment in the merchant service. She was 340 ft. long and 46 ft. broad.

THE NAVE, RIPON CATHEDRAL 183

The church was a collegiate church, belonging originally to a monastery founded about 660, and containing at present work of all periods, beginning with its Saxon crypt. The nave was built in the fourteenth century, the ceiling is modern. The boundaries of the see were modified by the institution of the diocese of Wakefield in 1878.

LORD JOHN RUSSELL AND THE ECCLESIASTICAL TITLES BILL . . 185

Regarded as one of the best "hits" in the history of *Punch*. The Act was never put in force, and was repealed in 1871.

CARDINAL WISEMAN, BY THOMAS BRIGSTOCKE 187

THE REV. JOHN KEBLE, BY GEORGE RICHMOND, R.A. (drawn in 1863) 188

CARDINAL NEWMAN, BY MISS EMMELINE DEANE 189

Painted in 1889, the year before his death. He was born in 1801. The artist is described in Graves's *Dictionary of Artists, 1760–1893*, as having exhibited miniatures at the Royal Academy between 1879 and 1892.

THE REV. F. W. FABER 191

JOSEPH BLANCO WHITE 192

The grandson of an Irish merchant established in Spain, for which reason the name had been translated into Blanco. He had been educated for the priesthood, but had left it and escaped to England in 1810, and for a time had been an Anglican clergyman. He was a member of the Oriel College Common Room while studying at Oxford, but left the city soon after Whately, to whose sons he acted as tutor. He became a Unitarian in 1835.

EDWARD BOUVERIE PUSEY, D.D., BY GEORGE RICHMOND, R.A. . . 193

LITTLEMORE CHURCH, NEAR OXFORD 195

Built under Newman's auspices, and one of the first results of the "Gothic revival" combined with the Oxford movement.

HURSLEY CHURCH AND RECTORY 195

Keble succeeded his father as Vicar of Hursley in 1835, and held the living (with Otterbourne) till his death in 1866.

KEBLE'S RESTING PLACE, HURSLEY CHURCHYARD, HANTS . . . 197

The graves of the poet and his wife.

JOSEPH STURGE, AFTER A. RIPPINGILLE 199

A leading member of the Society of Friends and an eminent philanthropist. His investigations of the "apprenticeship system," which

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followed the abolition of slavery in the West Indies, led to its discontinuance. He strongly supported both the anti-Corn law movement and the Chartist movement for the extension of the franchise, but eventually found it impossible to support Chartism. He was president of the Peace Society and a conspicuous citizen of Birmingham.

ALEXANDER KILHAM 201

CONVENTION OF THE ANTI-SLAVERY SOCIETY, BY B. R. HAYDON . 205

Thomas Clarkson is speaking, his hand raised to heaven as he implores a blessing on the labours of the Congress. His daughter-in-law and her son are conspicuous on his right; next to them G. W. Alexander (with the MS.), treasurer of the Anti-Slavery Society. Samuel Gurney, W. Allen, and Stacy are in front of the treasurer. Among the 130 persons depicted are Joseph Sturge, William Forster, Sir T. F. Buxton, O'Connell, Wendell Phillips, the American abolitionist, the Rev. J. Angell James, Mrs. Lucretia Mott, a well-known American philanthropist, the Rev. Thomas Binney, a famous Nonconformist preacher, and two negro delegates from Jamaica. It is impossible to explain their positions here, but a full key to the picture is contained in the *Catalogue* of the National Portrait Gallery.

EDWARD IRVING, BY JOSEPH SLATER 206

THE CHANCEL, CATHOLIC APOSTOLIC CHURCH, ALBURY PARK . . 207

The church was built in 1842, chiefly at the expense of Henry Drummond, M.P. In the early days of the Irvingites the six elders, with the "angel" in their midst, the seven prophets, and the seven deacons, sat in successive rows, each a step lower than that preceding it, on a platform at the upper end of the chapel. Afterwards the ritual became much more elaborate. On the Communion Table are flower vases and a tabernacle for the reserved Sacramental elements; the reservation, however, is merely for their administration to the sick, and has not the significance attributed to it by Roman Catholics and High Anglicans.

JOHN NELSON DARBY 208

This portrait, for which the Editor has to thank Colonel Le Pelley, of St. Peter's-in-the-Wood, Guernsey, and John Hines, Esq., is taken from a drawing made by Mr. Edwin Oakley about 1891 from an old photograph. In F. W. Newman's "Phases of Faith," 1850, pp. 27–45, a striking account is given both of Groves (*see* text) and of an "Irish clergyman," who is clearly J. N. Darby, and who exercised great influence on the author for a time. Darby had injured his health by his apostolic exertions among the Wicklow peasantry, who, because of his zeal and his voluntary privations, regarded him as a saint; nevertheless he lived to visit America and New Zealand, and died at 82.

THOMAS HOOD (artist unknown) 210

FELICIA DOROTHEA HEMANS, BY ANGUS FLETCHER 211

ALFRED TENNYSON IN 1844, BY SAMUEL LAURENCE 213

Mr. Theodore Watts, in the *Magazine of Art*, Vol. XVI., p. 42, says: "that the high quality of 'strangeness' [which Bacon regards as inseparable from the highest beauty] is found in some degree in this portrait, though its accuracy in the proportions of the features is questionable; still, it is stated to be a good likeness."

EBENEZER ELLIOTT 215

LORD MACAULAY, BY SIR FRANCIS GRANT, P.R.A. 217

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THOMAS CARLYLE, BY SIR J. E. MILLAIS, BART., P.R.A. . . . 219

THE ATTIC STUDY, CARLYLE HOUSE, CHELSEA 221

The room was meant to be sound-proof. Planned in 1843, it was built in 1853 at a cost of £169, when the noises which troubled the sage had become intolerable, and a long lease of the house had been secured. Distant sounds, however, not heard before, replaced the nearer disturbances from pianos, dogs, and "demon fowls." Portraits and some of Carlyle's books adorn the walls, while his study chair and inkstand are there. Two ventilators are above the fireplace. The original window, shut off by a door, is seen through the opening.

CHARLES DICKENS IN 1855, BY ARY SCHEFFER 225

WILLIAM HARRISON AINSWORTH, BY D. MACLISE, R.A. . . . 228

EDWARD BULWER, LORD LYTTON, BY D. MACLISE, R.A. . . . 229

CAPTAIN FREDERICK MARRYAT (from a drawing by D'Orsay) . . 230

BENJAMIN DISRAELI, BY D. MACLISE, R.A. 231

A VILLAGE CHOIR, BY THOMAS WEBSTER, R.A. 233

ENTRANCE TO THE ZUYDER ZEE, TEXEL ISLAND, BY CLARKSON STANFIELD, R.A. 234

Exhibited at the Royal Academy in 1844.

PEACE AND WAR, BY SIR EDWIN LANDSEER, P.R.A. 235

Exhibited at the Royal Academy in 1846.

ST. PANCRAS CHURCH (*see* text) 237

FONTHILL ABBEY IN 1823 239

The old house had been burnt down in 1755. Beckford's mansion, here shown, was built on another site. The central tower fell on December 21, 1825, destroying the whole of the western part of the abbey. The building was then sold and the ruins removed.

THE HOUSES OF PARLIAMENT 241

Sir Charles Barry's plan was selected as the best of 97 sent in. The building covers eight acres, and contains 11 courts, 100 staircases, and 1,100 rooms. The Clock Tower is 318 ft. high, the Middle Tower 300 ft., the Victoria Tower 340 ft.

SIR GEORGE BIDDLE AIRY 242

THE ROYAL OBSERVATORY, CAPE TOWN 243

Erected in 1825–29, about three-and-a-half miles from the town. According to the *Encyclopædia Britannica* the work done there has included the verification and extension of the arc of meridian, measured by Lacaille, also at Capetown in 1751–1753, and a catalogue of over 12,000 stars.

DRAWINGS OF NEBULÆ, BY SIR JOHN HERSCHEL, BART. . . . 245

Philos. Trans., 1833, Pt. 2, Figs. 35 and 87. In the first the "resolvable knots" suggested to Sir W. Herschell an absorption of the nebulous matter; the latter is one of a series apparently resolvable into star-clusters.

THE GREAT TELESCOPE, BIRR CASTLE, IRELAND 247

The reflecting telescope, 6 ft. aperture and 54 ft. focal length, was completed in 1845 at a cost of £20,000. Its construction is due to

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William Parsons, third Earl of Rosse, who devoted a large part of his life to improving the manufacture of reflecting telescopes. This instrument was applied chiefly to the examination of nebulæ, and the important results attained included the discovery of the class of spiral nebulæ and the resolution of many nebulæ into star-clusters.

THOMAS YOUNG, BY H. P. BRIGGS, R.A. 251

MICHAEL FARADAY, F.R.S., BY THOMAS PHILLIPS, R.A. 257

SIR CHARLES WHEATSTONE, F.R.S., BY SAMUEL LAURENCE 259

A drawing in chalk. Wheatstone is known also as the inventor of the stereoscope in 1838, and as the patentee, in conjunction with W. F. Cooke, of the first electric telegraph (1837). *See* p. 784

JAMES PRESCOTT JOULE, BY ALFRED GILBERT, R.A. 260

A CHEMICAL LABORATORY IN 1832 262

THOMAS GRAHAM, BY G. F. WATTS, R.A. 263

SAMPLES OF WHEAT GROWN AT ROTHAMSTED, HERTS 265

The two divisions show specimens of the produce of the same plots of land under various manures for 1878 and 1899, the thirty-fifth and fifty-sixth successive years of cultivation. Taking the specimens in order from the left hand in each division, the first has been grown with farmyard manure at the rate of 14 tons per acre per annum; the next, without manure since 1839; the third, with 200 lb. of sulphate of potash, 100 lb. of sulphate of soda, 100 lb. of sulphate of magnesia, and $3\frac{1}{2}$ cwt. of superphosphate; the fourth, with these minerals, but with the addition of 200 lb. ammonium salts per acre per annum; the fifth and sixth as the fourth, but with double and treble the amount of ammonium salts respectively; the seventh as the fourth, but with 550 lb. nitrate of soda per acre per annum. This quantity is reckoned equal to 400 lb. ammonium salts.

PLAN OF THE SURREY IRON RAILWAY 269

The line, planned by Mr. W. Jessop, a prominent engineer, was originally intended to connect London with Portsmouth, but it was always a financial failure, especially when the Croydon Canal, now replaced by the L. B. & S. C. main line, was opened in 1809. Eventually the extension from Croydon to Merstham was bought by the L. B. & S. C., and the company dissolved in 1839. The line from Wandsworth to Croydon was not taken up till 1848. The waggons generally belonged to private owners, and were drawn by horses, mules, or donkeys. (*Engineer*, January 19, 1900.)

MODEL OF A SOUTH WALES BLAST FURNACE BEFORE 1850 . . . 272

The furnace was of massive masonry, with a lining of fire-brick blocks, separated from it by a layer of sand. Four arched openings were left at the base, one for the forehearth and tapping hole, three for tuyères, which were connected by a tunnel conveying the blast main; the ore and fuel were fed in at the top, through four openings in the tunnel head. A blowing engine supplied blast to two cold-blast tuyères, through leather "goosenecks," and to the third (hot-blast) tuyère through a jointed cast-iron gooseneck. The pipe-stove heated the blast to 370° centigrade. (Catalogue *ut sup.*)

GEORGE STEPHENSON, AFTER H. P. BRIGGS, R.A. 275

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EARLY LOCOMOTIVE ENGINES 277, 278, 279

Trevithick's tram locomotive had a single horizontal cylinder $8\frac{1}{4}$ in. diameter and 54 in. stroke, enclosed in the boiler, 6 ft. long by $4\frac{1}{2}$ ft. diameter; the whole weighed five tons in working order. It failed because the tram lines were not strong enough. The illustration is from a model made at the L. & N. W. R. works at Crewe. Blenkinsop's engine (from a photograph of a model) was made in 1812, and was the first which was financially successful. It had two cylinders (of 8 in. diameter and 20 in. stroke) set in such a way as to avoid difficulties in starting; the carrying wheels were 42 in. in diameter, and the weight five tons. "Puffing Billy," built in 1813 at Wylam, had two cylinders of 9 in. diameter and 36 in. stroke, and worked till 1862. The "Locomotion," the first engine of the Stockton and Darlington line, had two cylinders of 10 in. diameter and 24 in. stroke; the speed was eight miles per hour, and the weight, in working order, $6\frac{1}{2}$ tons. The engine stands on a model of George Stephenson's first railway bridge. The "Rocket" was built by R. Stephenson & Co. to compete at the famous locomotive trial on the Liverpool and Manchester Railway, October 6–13, 1829; she then attained 29 miles per hour, but on the opening day ran (with Huskisson after his accident) 36, and some years afterwards 53, miles per hour. She ceased running in 1844. The firebox and smokebox are inaccurately reconstructed, and the cylinders were more sharply inclined and higher, while the travelling wheels were higher. The cylinders are 8 in. diameter and 17 in. stroke; the drivers are 56 in. in diameter. The boiler pressure was 50 lb., and the whole engine and tender weighed, when working, less than $7\frac{1}{2}$ tons. The "Sanspareil," built for the same competition by T. Huckworth, of the Stockton and Darlington line, had then smaller cylinders and wooden spokes to the wheels. She worked till 1844 as a locomotive, and was then used as a colliery pumping engine till 1863. The cylinders were 7 in. diameter and 18 in. stroke, the coupled wheels 4 ft. 6 in. in diameter, and the engine, without the tender, weighed about $4\frac{3}{4}$ tons when at work. The "Novelty," by Braithwaite and Ericsson, was stoked through a central flue in the vertical part of the boiler, the air being forced into the fire by a bellows worked by the engine. She carried a water-tank below and coke in baskets upon her own truck. The two cylinders were vertical, 6 in. diameter and 12 in. stroke, the drivers 4 ft. 2 in. in diameter. The "Sanspareil" and "Novelty" both broke down at the trial. The escape flue of the latter for the gases and smoke was lengthened, as shown in the sectional plan. The "Sanspareil's" boiler had an internal return flue projecting beyond the boiler on the firegrate side and enclosed in a water-jacket, extending the heating surface.

EARLY ENGLISH ROLLING STOCK 281

On the Liverpool and Manchester Railway, 1833.

ISAMBARD KINGDOM BRUNEL, AFTER J. C. HORSLEY, R.A . . . 282

GREAT WESTERN ENGINES 283

The "North Star," the first engine of the line, was built in 1837 by R. Stephenson & Co., and remained in use till 1870. She had a pair of inside cylinders 16 in. diameter and 18 in. stroke, and single driving wheels 7 ft. in diameter. The wheels were not originally coupled. The "Vulcan," built in 1837 by the Vulcan Foundry Co., had single driving wheels 8 ft. in diameter, and a pair of inside cylinders 14 ft. in diameter and 16 in. stroke. The "Firefly," built in 1840, had driving wheels 7 ft. in diameter, and a pair of inside cylinders 15 in. diameter by 18 in. stroke. The "Iron Duke," built at Swindon in

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1847, had cylinders 18 in. in diameter by 24 in. in stroke, with single driving wheels 8 ft. in diameter. For many years this was the regular G.W.R. type of broad-gauge engine.

PRIMITIVE THIRD-CLASS CARRIAGE 286

The Bodmin and Wadebridge Railway, authorised by Parliament in 1832 and opened in 1834, was intended chiefly to bring sand for manure from the Camel estuary to Bodmin. Built for £2,300 a mile, it was bought by the L. & S.W.R. during the "battle of the gauges" in 1845 to prevent its becoming part of the G.W.R. system, but it remained absolutely isolated from the English railway system till the G.W.R. opened a branch to Bodmin in 1889. One passenger train ran each way on alternate days. Since 1892 it has formed part of the L. & S.W.R. system. To its long isolation the survival of this primitive form of carriage is due. The line is of interest to the student of railway archæology. (Acworth, *Railways of England*, 1900, pp. 219, 321.)

KING HUDSON'S LEVÉE 287

In 1845 "Hudson numbered the Prince Consort among his acquaintances, and the aristocracy crowded his parties," and his admirers presented him with £16,000 as a testimonial. He was charged with issuing shares secretly, giving them away to influential persons, and with borrowing freely from some of the companies which he controlled. He was compelled, accordingly, to resign the chairmanship of several in 1849, but his collapse was less complete than is sometimes supposed, and he sat as M.P. for Sunderland (to the development of which town he largely contributed) from 1849 to 1859. He had been Mayor of York, and was instrumental in making it a railway centre. The Midland, the Eastern Counties (now the G.E.R.), and the various lines now comprised in the N.E.R., were those with which he was chiefly concerned. He died in 1871.

LONDON AND NORTH-WESTERN RAILWAY ENGINE, 1885 289

One of Webb's compound engines; the outside cylinders are high pressure and act on the rear driving wheels, while a single low-pressure cylinder inside receives their exhaust steam, and acts on the axle of the front drivers. The reversing gear, seen passing behind the front driver, acts on the high and low pressure simultaneously, but arrangements are provided for separate adjustment, and in starting the engine "can work non-compound." The drivers are each 6 ft. 3 in. in diameter.

SWING, THE RICK-BURNER 291

From a pamphlet professing to be the autobiography of a small farmer, turned out of his farm by a new landlord to make room for a fox-covert, convicted improperly of poaching, and then driven from his cottage by the parson's demand for tithe. The picture represents the parson subsequently refusing him alms. "Swing" was the alias adopted by the rick-burners, but the hero of the pamphlet, who bears the same name, is only one by accident, and the moral of it is that the real authors of the outrages are landlords and parsons.

LORD ALTHORP, FIRST EARL SPENCER, BY SIR M. A. SHEE, P.R.A. . 293

JAMES SMITH OF DEANSTON, BY RICHARD ANSDELL, R.A. . . . 295

MICHAEL SADLER, M.P., BY DANIEL MACLISE, R.A. 299

LORD ASHLEY, SEVENTH EARL OF SHAFTESBURY, AFTER J. SLATER . 301

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TRADE UNION CARDS 304, 306

From a large collection made by Mr. and Mrs. Sidney Webb and presented to the London School of Economics.

ROBERT OWEN, AFTER W. H. BROOKE 305

FEARGUS O'CONNOR 309

THE FINANCIAL RECOVERY AFTER 1836 313

Green was a famous aëronaut.

THE LOCK-UP HOUSE, BY GEORGE CRUIKSHANK 317

From the first edition of Charles Dickens's earliest work, "Sketches by Boz," 1836, illustrating a passage in the life of Mr. Watkins Tottle, when arrested for a debt of £33 10s. 4d. Mr. Tottle, however, does not appear in the picture. The fast and vulgar youth in front of the fireplace is explaining that he is only there because he obliged a friend by putting his name to bills, and that he expects to get out directly. The hardened debtors whom he addresses receive his assurances with incredulity, and agree that they would have a better opinion of him "if he'd say at once, in an honourable and gentlemanly manner, as he'd done everybody he possibly could."

DRESS WITHOUT ART . . . . . *to face* 318

The walking dress comprises a brown satin cape with velvet sleeves and loose hanging sleeves of satin over them, and a bonnet of cherry velvet. The examples of morning dress comprise (1) a dress of green cashmere with cambric collarette, and pink velvet puffings in the hair; (2) a green velvet dress with worked lawn cuffs and chemisette, a cap trimmed with terry velvet, an embroidered cashmere shawl, and a brown velvet bonnet with a bird of paradise plume. The vividness of the colours is noteworthy.

MR. PERKINS DISCOVERED IN THE ZOOLOGICAL GARDENS 319

From the first edition (1841) of "Comic Tales and Sketches, edited by Michael Angelo Titmarsh," Thackeray's early *nom de guerre*. The drawing illustrates "The Bedford Row Conspiracy." The attachment is objected to by the lady's relatives. She has been feeding the bears at the Zoological Gardens on a Sunday, and has been assisted by her lover, unwittingly, to jump down from the parapet in full view of a group of her aunt and cousins, with a footman and a French governess, "who had all been for two or three minutes listening to the billings and cooings of these imprudent young lovers."

CHILDREN IN 1836, BY GEORGE CRUIKSHANK 320

From the first edition of "Sketches by Boz," appended to an article on "Hackney Coach Stands." "The smart servant girl with the pink ribbons, at No. 5, opposite, suddenly opens the street door, and four small children forthwith rush out and scream 'Coach!' with all their might."

QUEEN ADELAIDE, BY SIR W. BEECHEY, R.A. 321

QUEEN VICTORIA RECEIVING THE EUCHARIST AT HER CORONATION . 323

After the Lords had done homage, and the Queen had been acclaimed by the assembly, "the Archbishop of Canterbury went to the altar. The Queen followed him and, giving the Lord Chamberlain her crown to hold, knelt down at the altar: the Gospel and Epistle of the Communion Service having been read by two bishops, the Queen made her offerings . . . and received the sacrament, kneeling on her faldstool by the chair. Afterwards she put on her crown, and with

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her sceptre in her hands, took her seat again on the throne while the archbishop concluded the service." (*Annual Register*, 1838.) The coronation took place on June 28, 1838.

DUEL BETWEEN THE DUKE OF WELLINGTON AND LORD WINCHILSEA . 324

The duel took place in Battersea Fields, now Battersea Park, on March 21, 1829. Sir Henry Hardinge acted as secretary for the duke, Lord Falmouth for the Earl of Winchilsea. The duke fired first and missed, whereupon his antagonist fired in the air—an action misinterpreted in the print—and then apologised. The earl was a furious champion of Protestantism. He died in 1858.

THE HORSES' PETITION FOR THE OBSERVATION OF THE SABBATH . 325

SIR ROWLAND HILL, K.C.B., BY JOHN ALFRED VINTNER . . . 327

THE GENERAL POST OFFICE IN 1832 329

PUNCH'S ANTI-GRAHAM WAFERS 332

On June 14, 1844, Mr. T. S. Duncombe, M.P., presented a petition from W. T. Linton, Mazzini, and others, stating that their letters had been opened. Sir James Graham, Home Secretary, admitted that he had authorised this under a statute of Queen Anne. He had really acted at the request of Lord Aberdeen, the Foreign Secretary, who wished to oblige certain foreign Governments, but he was made the scapegoat. This sheet appears to have been sold separately from *Punch*, and is referred to in the number of July 6, 1844. Attempts were made to abolish the power of opening letters, but it still exists, and is believed to have been used during the Irish troubles in 1881-1882.

THE SCENE OF THE DISRUPTION, ST. ANDREW'S CHURCH, EDINBURGH 335

The formal disruption took place on the day of opening of the General Assembly, May 18, 1843. After the usual opening ceremonies, the High Commissioner's levée and the sermon in the High Church, the assembly proceeded to St. Andrew's Church, where their sittings for business were held. The Moderator, Dr. Welsh, read a long protest against the power exercised by the Civil Courts to override the Church Courts, and withdrew from the assembly, followed by the "Non-Intrusionists." The system of patronage which had led to the secession was altered in 1874.

FATHER MATHEW, BY EDWARD DANIEL LEARY 338

SCENES FROM IRELAND DURING THE FAMINE 339, 340

These illustrations are from sketches by Mr. James Mahoney of Cork, the special artist of the *Illustrated London News*. They appeared on February 13 and 20, 1847. The boy and girl at Cahera are searching for a potato. The degree of distress and mortality may be gathered from an extract which is appended, from a letter by Dr. Crowley of Cork stating that he and another doctor had been themselves compelled to bury a body, dead eleven days, in a kitchen garden. The hut in the old chapel yard (7 ft. by 6 ft.) originally built to shelter those who watched to prevent body-snatching, and surrounded by recent graves, served as a refuge for six members of one family named Barrett, who had been evicted from their cabin. They were suffering from malignant fever and starving. Between Clonakilty and Skibbereen the artist met "a funeral or a coffin every hundred yards."

LORD GEORGE BENTINCK 344

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LORD PALMERSTON, BY W. BARRAUD 345

LORD STRATFORD DE REDCLIFFE, BY G. F. WATTS, R.A. . . . 349

"GENERAL FÉVRIER" TURNED TRAITOR 351

The Emperor Nicholas had said in reference to the war, "Russia has two generals in whom she can confide—Generals Janvier and Février" (January and February). He was taken ill of influenza on February 14, 1855, and, exposing himself unwisely at a review, died on March 2. "If anyone wants to see the effect of war upon the minds not of soldiers in the field, but of civilians at home, let him turn to John Leech's celebrated cartoon" [here shown], "brilliant in conception, admirable in execution, savage in sentiment, and odious in result" (H. W. Paul, *History of Modern England*, I. 391, *note*).

LORD LAWRENCE, BY G. F. WATTS, R.A. 354

CAWNPORE IN 1857 355

The magazine, which was entrusted to the guardianship of Nana Sahib, who was supposed to be friendly, was in the N.W. corner of the military lines. The entrenched camp improvised by Sir Hugh Wheeler was some six miles lower down the river to the S.E. The British retired hither before the soldiers definitely mutinied. Nana Sahib seized the magazine with its stores of artillery, besieged the camp, an utterly ineffective stronghold, for seventeen days, June 7–24, 1857, and induced the British to surrender, promising boats to convey them to Allahabad. When they had gone aboard, June 27, the boats were fired on, the men killed, and the women and children (about 80 in all) carried back and confined, with other British captives, in a small house near the Assembly Room, between the native city and the river, where they suffered from cholera, diarrhœa and dysentery, and were compelled to grind corn for the Nana's household. When Havelock defeated the Sepoy force at Cawnpore, the Nana gave orders that the prisoners, in all some 200, should be killed (July 15). The Sepoys, and butchers from the bazaar, carried out the order, and the victims, some not yet dead, were cast down a well at the back of the house (Kaye, *Sepoy War in India*, II., Bk. V., c. 2, 3).

THE SEIZURE OF THE CONFEDERATE ENVOYS 358

The two envoys, Mason (to England) and Slidell (to France), had run the blockade at Charleston, reached Havana, and taken passage thence for St. Thomas, *en route* for Southampton, by the R.M.S. *Trent*. On November 8, in the Bahama Channel, the *Trent* was stopped by the U.S. corvette *San Jacinto* under Captain Wilkes, which, after twice firing to stop her, sent a boat aboard to demand a list of passengers, and to seize the envoys and their secretaries. This was refused, but the identity of the party was admitted. Slidell appealed to the protection of the British flag, and Captain Williams, the mail agent, formally protested against the outrage as the representative of the Queen. The *San Jacinto*, however, sent out three more boats and lay within 200 yards of the *Trent*, exposing her to a broadside. Resistance, therefore, was useless; and after a painful scene caused by the efforts of Miss Slidell to block the door of her father's cabin, the envoys and their secretaries were removed. [Account by the purser of the *Trent*, *Illustrated London News*, Nov. 6, 1861.] The envoys were confined in Fort Warren, Boston Harbour, and the seizure was received with enthusiasm in the United States. It was, however, absolutely indefensible, and after British troops had been hurried to Canada in winter, and preparations had been made for war, the envoys were quietly put aboard a British man-of-war, and brought to England in the early days of 1862.

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DAME COBDEN'S NEW PUPIL 359

The accompanying letterpress, written in the style of a first reading book, explains that Louis Napoleon visited a nice old lady called Cob-den, who liked teach-ing lit-tle boys how to play com-merce. Louis Napoleon was not quite so ignorant as this satire suggests, as he had lived in England and had made an attempt to reduce duties in 1856. But it is clear that Free Trade in France came from above, and was strongly opposed even in the Emperor's own Cabinet. Morley, *Life of Cobden*, I.

SEBASTOPOL IN 1854, AFTER W. TELBIN 361

THE CAVALRY CHARGE AT BALAKLAVA, OCTOBER 25, 1854 363

The British heavy cavalry had charged and driven back the Russians, who had previously captured four small redoubts with seven guns from the Turks. As the Russians were believed to be moving the guns, Lord Raglan sent a written order to Lord Lucan, commanding the Light Brigade of cavalry, to charge and check the movement. By the time the order reached Lord Lucan, the Russians had re-formed and the attackers were further flanked by artillery, riflemen, and infantry, on the hill-sides. Nevertheless Lord Lucan obeyed the order, and the Light Brigade charged right through the Russian army, sabred the gunners of the captured guns, and returned, the return being partly covered by a squadron of French chasseurs d'Afrique. *See* Kinglake, *Invasion of the Crimea.*

WINTER IN THE CRIMEA 365

FLORENCE NIGHTINGALE 367

Miss Nightingale had begun nursing in a Protestant sisterhood in Germany, and had applied her knowledge and power of organisation to reorganising an institution for governesses before going to the Crimea. She refused a testimonial of £50,000, and it was applied to founding a nursing institution at St. Thomas's Hospital. This bust was subscribed for in pence by the troops.

H.M.S. *WARRIOR* 371

Now (1904) a depôt ship for torpedo boats and destroyers ; 9,210 tons.

ARCHDEACON, AFTERWARDS CARDINAL, MANNING 375

After George Richmond, R.A.

BENJAMIN JOWETT, BY GEORGE RICHMOND, R.A. 376

BISHOP COLENSO, BY SAMUEL SIDLEY 377

ROBERT BROWNING, BY FIELD TALFOURD 380

ELIZABETH BARRETT BROWNING, BY FIELD TALFOURD 381

MATTHEW ARNOLD, BY G. F. WATTS, R.A. 382

GEORGE GROTE, BY T. STEWARDSON 385

Painted in 1824, when he was thirty years of age.

HENRY HART MILMAN, BY G. F. WATTS, R.A. 386

Dean of St. Paul's from 1849 to his death in 1868.

W. M. THACKERAY, BY SAMUEL LAURENCE 387

CHARLOTTE BRONTË, AFTER GEORGE RICHMOND, R.A. 389

Reproduced as the frontispiece to her Life, by Mrs. Gaskell, 1857.

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GEORGE ELIOT, BY SIR FREDERICK W. BURTON, R.H.A. (Drawn in 1865) 391

THE TINTED VENUS, BY JOHN GIBSON, R.A. 392

In the Diploma Gallery, Royal Academy. This statue, exhibited in the International Exhibition of 1862, was a replica of an uncoloured statue, but Gibson had long resided in Rome, and wrote in 1846 that he "could not bear to see a statue without colour." In that year he introduced a little colouring into a statue of Queen Victoria, executed for her; in the Tinted Venus he went further. He described it as "the most carefully laboured work I ever executed; for I wrought the forms up to the highest standard of the ideal. The expression I endeavoured to give my Venus was that spiritual elevation of character which results from purity and sweetness, combined with an air of unaffected dignity and grace. . . . I tinted the flesh like warm ivory, scarcely red, the eyes blue, the hair blond, and the net which contains the hair golden." He fell in love with the statue like Pygmalion with Galatea, and only gave her up to the patron (Mr. Preston) by whom she had been ordered four years after completion. (*Dict. of National Biography.*) The question of colouring statues was actively debated in consequence of the Venus, but the statue deserves reproduction independently of its colouring, the suitability of which could hardly be judged of except by viewing the original.

BACCHANTE AND CHILD, BY R. J. WYATT 393

THE KNIGHTING OF HENRY ESMOND, BY A. L. EGG, R.A. 394

Exhibited at the Royal Academy in 1858. Thackeray, *History* of Henry Esmond, Book II., c. xv. "On the table was a fine sword, with a red velvet scabbard, and a beautiful chased silver handle, with a blue riband for a sword-knot. 'What is this?' says the captain, going up to look at this pretty piece. Mrs. Beatrix advanced towards it. 'Kneel down,' says she; 'we dub you our knight with this'—and she waved the sword over his head. 'My Lady Dowager hath given the sword; and I give the riband, and mamma hath sewn on the fringe.' 'Put the sword on him, Beatrice,' says her mother. 'You are our knight, Harry—our true knight. Take a mother's thanks and prayers for defending her son, my dear, dear friend.' She could say no more, and even the Dowager was affected." Lady Castlewood and the Dowager Viscountess are on the spectator's left.

MALVOLIO AFFECTING THE COUNT, BY DANIEL MACLISE, R.A. . . 395

Twelfth Night, Act III., scene iv.: *cf* Act II., scene v.

THE CURFEW BELL, BY SAMUEL PALMER 397

THE COURTYARD OF THE COPTIC PATRIARCH'S HOUSE IN CAIRO. . 398

By J. F. Lewis, R.A.

THE MONK, BY WILLIAM HENRY HUNT 399

THE BODY OF HAROLD BROUGHT TO THE CONQUEROR, BY FORD MADOX BROWN 401

THE WHALERS, BY J. M. W. TURNER, R.A (Royal Academy, 1845) . 403

HONEYWOOD INTRODUCING THE BAILIFFS AS HIS FRIENDS . . . 405

By W. P. Frith, R.A.; from Goldsmith's comedy, *The Good-Natured Man*. Act III., scene i. Honeywood, whose good nature is leading him to squander his property, is saved by Miss Rickland (with whom he is in love) from the execution which, to give him a lesson, his uncle and guardian has secretly put into his house. Miss Rickland

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calls just as the bailiffs have arrived, and apprehends the situation, in spite of his attempt to disguise them.

A Scene on the Tummel, Perthshire, by T. Creswick, R.A. . 407

An Etching in the "Germ," by W. Holman Hunt, O.M. . . . 409

One of two etchings signed by the artist, and forming the frontispiece of the first number of the *Germ;* the other shows the lover lying in deep grief in a graveyard. The history of the *Germ* has been written by Mr. W. M. Rossetti in the preface to a facsimile reprint published in 1901.

"Ecce Ancilla Domini!" by Dante Gabriel Rossetti . . . 411

Dated March, 1850. The Annunciation: "Behold the Handmaid of the Lord!" The head of the Virgin was painted from that of the artist's sister, the poetess Christina Rossetti; Thomas Woolner, the sculptor, sat for the head of the Archangel Gabriel.

The Vale of Rest, by Sir J. E. Millais, P.R.A. . . *to face* 412

Tate Gallery. "The most poetic of Millais' works." Exhibited at the Royal Academy in 1859.

William Whewell, D.D. (Master of Trinity College, Cambridge) . 417

John Stuart Mill, by G. F. Watts, R.A. 419

Henry Longueville Mansel, by William Riviere 421

Fellow of St. John's College, Oxford, Dean of St. Paul's after Milman (1849–1868), and famous as a Churchman and for his wit. A sketch of him is given by Burgon, in *Twelve Good Men.*

John Lindley, after J. H. Maguire 424

Interior of the Great Palm House, Kew Gardens . . . 425

Thomas Henry Huxley, by the Hon. John Collier . . . 427

Downe House, Downe, Kent 431

Charles Darwin, by the Hon. John Collier 433

Sir Richard Owen, by H. W. Pickersgill, R.A. 437

Sir James Young Simpson 442

Robert Liston, by John S. Stump 443

Netley Hospital 447

Overlooking Southampton Water; built 1858–1873, in the decorated Italian style, of purple bricks and Portland stone; over a quarter of a mile in length, covering ten acres of ground, and accommodating a thousand patients.

Ambulance Tent 448

From the official "Manual of Ambulance Transport," by Sir G. Longmore and W. A. Morris, issued by the War Office.

The *Ariel* and *Taeping* Racing: Off the Lizard 451

In the "Tea Race" (*see* text, p. 450) for a premium of 10s. per ton offered by the principal London importers of China teas to the ships which should bring the first of the year's crop. In this year, 1866, nine ships were engaged, their tonnage varying from 686 to 853. They left Foochow at various dates from May 29 to June 6. The *Fiery Cross* left on May 29; the *Taeping*, *Ariel*, and *Serica*, May 30.

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These four were the leading ships at the finish. The *Fiery Cross* kept her lead till August 17, but was then becalmed in sight of the *Taeping*, which had caught her up on August 9. She only sighted the Isle of Wight at 10 a.m. on September 6. "At 8 a.m. on Wednesday, September 5, the *Ariel* and *Taeping*, which had lost sight of each other for seventy days, found themselves off the Lizard, running neck and neck up the Channel under every stitch of canvas that could be set, under a strong westerly wind. They appear thus in the illustration, the *Taeping* in front. During the whole day they kept their relative positions, dashing up the Channel side by side in splendid style, sometimes almost on their beam ends, the sea sweeping their decks." At daybreak next morning (Sept. 6) the pilots boarded them off Dungeness, and they raced as before to the Downs, where they took steam tugs, both ships being still neck and neck. The tugs started almost simultaneously, but the *Taeping*, having the more powerful tug, was first at Gravesend, and was docked at 9.45 p.m., half an hour before the *Ariel*, the *Serica* following at 11.30 p.m. The time was 99 days, against 106 days in 1865. The first three vessels were built by Steel & Co., Greenock; the *Serica* was iron, the *Taeping* and *Ariel* "composite"—wood with iron framing. (Abridged from the *Illustrated London News*, September 22, 1866.)

THE *GREAT WESTERN* (*see* text) 453

THE *GREAT EASTERN* OFF THE ISLE OF WIGHT (*see* text) . . . 455

THE *CAMPANIA* 456

620 ft. long on deck, 65·3 ft. beam; depth of hull, 43 ft.; 12,950 tons gross; 30,000 h.p. indicated; propelled by twin screws.

MODEL OF THE *WILLIAM FAWCETT* (*see* text) 457

THE *RIPON* LEAVING SOUTHAMPTON WITH TROOPS FOR THE CRIMEA *to face* 458

With 600 rank and file of the Grenadier Guards and about 30 officers, February 23, 1854; 250 of the regiment also sailed in the screw steamer *Manilla*, and the Coldstream Guards on the same day in the *Orinoco*. (*Times*, February 23, 1854. *Annual Register*, February 22, 1854.) The steamers in the first instance went to Malta.

MODEL OF THE *BRITANNIA* 460

Built of wood at Port Glasgow in 1840; the first "Cunarder" in the Atlantic service. She carried 115 passengers (saloon only) and 225 tons of cargo; burnt 31 to 38 tons of coal in the 24 hours, and made $8\frac{1}{2}$ knots per hour. She was of 1,156 tons burden, 207 ft. long and 34 ft. beam ($54\frac{1}{2}$ ft. over paddle-boxes). On her maiden voyage, July, 1840, she reached Halifax from Liverpool in 11 days 4 hrs. and Boston in 14 days 8 hrs. Charles Dickens crossed in her in January, 1842, reaching Halifax after a very rough passage in 15 and Boston in 18 days. He wrote home: "I never will trust myself on the wide ocean, if it please heaven, in a steamer again." Two dangers which impressed him were that (1) the vessel must take fire if the funnel were blown overboard, because it was 40 ft. high, and at night "you see the solid fire two or three feet above its top," and (2) she rolled alarmingly as her coals lessened. He states, also, that she carried no boats, and was "full of fire and people." (*Life*, by Forster, Book IV., § iii.) He returned in a sailing ship, but reconciled himself to crossing in the Cunard liner *Cuba* twenty-five years later.

THE *CITY OF LONDON* (Inman Line; built 1863) 461

THE FIRST *OCEANIC*, 1871 (broken up in 1902) 464

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THE *ALASKA* 465

6,932 tons, 10,000 indicated h.p. The Guion Line ceased running in 1894. The *Alaska*, after serving as a residence for workmen at Harland and Wolff's, was broken up about 1902.

MODEL OF THE *GREAT BRITAIN* 467

Length between perpendiculars, 289 ft.; extreme breadth, 50½ ft.; depth, 32 5 ft.; displacement, 3,618 tons; speed, 11 knots. She carried 1,000 tons of coal and 260 passengers, and was built of iron. She ran ashore at high tide in Dundrum Bay in 1846, was floated off and sold at a heavy loss, and ran in the Australian service from 1853 to 1874. She afterwards became a coal hulk in the Falkland Islands.

EXAMPLES OF MODERN LIGHTHOUSES AND LIGHTSHIPS 469

The Wolf Rock Lighthouse, midway between Scilly and the Lizard, was built 1860–1869 on a rock submerged 2 ft. at high water; it is 116½ ft. high, 41 ft. 8 in. diameter at the base, and 17 ft. at top. The walls are 7 ft. 9½ in. thick, decreasing to 2 ft. 3 in. The shaft contains 3,296 tons of stone (*Encycl. Brit.*). The Maplin, of which a model is shown, stands on sands.

OUTLINE MAP ILLUSTRATING ENGLISH AGRICULTURE IN 1850 . . 473

All to the east of the black line running north and south comprised the chief corn-growing districts; in these the average rental per acre of cultivated land was 30 per cent. lower than in the counties west of it, which were concerned chiefly with grazing, green crops, and dairy farming. Above the dotted line running from east to west the average wages of agricultural labour were 37 per cent. higher than below it, owing to the competition of mines and manufactories with agriculture for labour. They varied from 14s. per week in the West Riding to 8s. in Essex, 7s in Suffolk and South Wilts; the rental, from 42s. per acre in Lancashire to 17s. 6d. in South Wilts and 17s. in Durham. The produce of wheat per acre averaged 32 bushels in Norfolk and Suffolk, 21 in Dorset. The rental in the corn-growing counties averaged 23s. 8d. per acre; that of the others west of the line 31s. 5d., owing to the increased demand for meat and dairy produce. The northern counties had little more than half the pauperism of the south.

MODEL OF MCCORMICK'S REAPER 477

The motion of the machine, by the gearing attached to the large wheel, works backward and forward a sharp blade set in slots in the projecting teeth. These support the wheat as it is cut, while the revolving frame first presses it against the blade, then throws it on the platform, whence it is raked by the attendant. A sort of projecting loop of stout iron wire and a dividing bar keep the horses and machine respectively clear of the wheat not yet cut, and the screen prevents the cut wheat from falling off on the wrong side. Cyrus H. McCormick is believed to have constructed and worked the machine in Virginia in 1831. *Catalogue* as above.

PORTABLE HORSE-POWER THRASHING MACHINE 479

Shown at the 1851 Exhibition. The ears are carried round between the drum and its casing, and the grain knocked out of them by iron beaters attached to the drum.

J. J. MECHI 480

PAGE OF THE VISITORS' BOOK, TIPTREE HALL 481

SIR JOHN LAWES, BY SIR HUBERT VON HERKOMER, R.A. . . . 485

THE ROYAL AGRICULTURAL COLLEGE, CIRENCESTER 487

Established 1845, under the patronage of the Prince Consort; had

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in 1904 eighteen Professors and other instructors. A farm of 500 acres is attached. The front is 196 ft. in length.

SCARCITY OF CURRENCY IN 1847 489

Attributed, absurdly, to the restriction of note issue by private banks as well as by the Bank of England, imposed by Peel's Bank Charter Act. Much was made of this grievance by the Protectionists of the time in various circulars, etc., issued by the "National Association for the Protection of British Industry and Capital," 1849–1853.

THE REV. CHARLES KINGSLEY, BY LOWES DICKINSON 493

THE AMERICAN CRISIS OF 1857 (*see* text) 497

THE COTTON FAMINE: DISTRIBUTION OF CLOTHES TO OPERATIVES . 501

The money and clothing received were sent by the general committee for Manchester to the local committees, chiefly to the Manchester and Salford Provident Society, which normally combined the work of a mendicity society and a penny bank, but had little work under the latter head during the famine, and so had offered to distribute relief. It was then distributing it for nearly the whole of Manchester, through local committees. Millowners, clergy, and others were supplied with forms of application for relief, which were sent to the central committee of the society and thence to the proper local committee, which, after due inquiry, gave relief tickets, usually in the form of orders on tradesmen, soup kitchens, or clothing depôts. In the week described (November, 1862) it had spent £5,000 in clothing —about ten days' supply. Besides charitable relief through this or other (mostly religious) agencies, many millowners paid part or even the whole of the customary wages to their unoccupied millhands (*Illustrated London News*, November 29, 1862).

EDMUND KEAN, BY J. S. STUMP 504

THE TRIAL SCENE IN *HENRY VIII.*, BY F. LLOYD . . . *to face* 504

Shakespeare, *Henry VIII.*, Act II., Scene 5. The trial takes place in a hall in Blackfriars.

SCENE FROM *OURS*, AT THE PRINCE OF WALES'S THEATRE . . . 506

Blanche Hay and Mary Netley, who have followed their (unacknowledged) lovers to the Crimea (on a yacht lent by a duchess to Lady Shendryn, the wife of another character in the play), find them housed in a log hut, "taken from the Cossacks," and are surprised, while playing at soldiers with a rifle and sword, by the entrance of one of the lovers (Chalcot), followed by the other; Mary makes a pudding, while the other ladies go out to see the fighting; a rival lover, a Russian prince, is brought in prisoner, sees his case is hopeless, and all ends happily. The scene (Act III.) is a good example of the stage conventions of the period. Mr. (afterwards Sir Squire) Bancroft, Miss Marie Wilton (Lady Bancroft), and Mr. (Sir John) Hare helped to make the play a success. The theatre was near Tottenham Court Road.

INTERIOR OF HER MAJESTY'S THEATRE: MDLLE. RACHEL'S FAREWELL 507

By E. L. Lami. Her first season in England.

THEIR ONLY HARVEST, BY COLIN HUNTER . . . . *to face* 512

Collecting kelp. Exhibited at the Royal Academy, 1879.

DR. GUTHRIE AMONG THE STREET ARABS OF EDINBURGH . . . 513

WILLIAM SMITH O'BRIEN 515

From a miniature in the possession of his descendant, Dermod O'Brien, Esq., of Cahirciveen.

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THOMAS FRANCIS MEAGHER 516

Escaped from Tasmania, 1852. Distinguished himself in the American War of Secession; spoken of among the American Irish as the General who was to reconquer Ireland, but drowned by a fall from the deck of a river steamer in 1867.

THE HON. SIR CHARLES GAVAN DUFFY, K.C.M.G. 518

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PREFATORY NOTE.

With the closing years of the nineteenth century the intellectual and industrial achievements of the British nation come to be so multifarious that they can hardly be dealt with in the same book as the social and political history. Science becomes cosmopolitan, so that no description of British achievements can exclude those of Europe or America. Processes in the great staple trades of the United Kingdom become far too specialised for the ordinary reader; a multitude of tertiary and miscellaneous industries defy classification and even enumeration; railways, merchant shipping, the machinery of commerce, deserve a volume apiece; and the various developments in the social structure, such as trade unionism and co-operation, have called forth whole libraries of their own. Literature and art can fare little better at the hands of the student of society as a whole. But the political history, too, becomes far more complicated and difficult to set forth. An immense change is set up by the advent of popular government with the machinery of agitation first developed in the Anti-Corn Law campaign and the Chartist movement. Our foreign relations become more complex as diplomacy tends to supersede warfare: the Irish problem in the nineteenth century is repeatedly more threatening than it has been since the sixteenth, and in the opening years of the twentieth it still awaits its solution. The Established Church sees the consummation of three great movements, partially anticipated in the previous century; the Roman Catholics and the Nonconformists escape from their disabilities, but at the end of the century are further from absolute religious equality than they seemed to be when its last quarter began. The army and navy have undergone more than one transformation; the State, and still more the municipalities, have multiplied their administrative functions during the period. The Colonies at the

beginning of the period were (if we put aside the West Indies) little more than tolerated appendages of the Mother Country; now the greatest of them have expanded into self-governing nations, with power to aid her in her difficulties, to influence her policy, to offer their experience for the solution of her social problems, and with the will to combine, by means as yet undevised, into a world-wide Empire of a type never previously approached in human history.

In preparing the original edition of this work in 1891–96 it was thought by Mr. Traill and myself that the defeat of Mr. Gladstone's Home Rule policy in 1886, following on the general election and the extension of the franchise in 1885, marked that year as the end of an epoch in English history. It is not impossible that the close of the longest reign will hereafter be regarded as a better conclusion; but as regards this new edition it is open to the objection that it would have required the transformation of the present volume and its expansion into two. Even since 1885, the local government of the three kingdoms has been revolutionised, new modes of power have been introduced into industry and domestic life, shipbuilding has taken a fresh start and is possibly on the eve of new and notable developments, legal reform has made considerable progress, labour questions have reached a critical stage, and it is only since the Jubilee of 1897 and the South African War that the British people has come to realise the full significance of the Empire. At the present moment we seem to be in a time of political, industrial, and scientific transition, the significance of which we, who live in it, cannot apprehend. It has been thought best, therefore, to stop at the date originally fixed for closing the work, but where the text had ceased to be adequate to present conditions subsequent changes have been indicated either in it (with the help of some of the contributors) or in bracketed footnotes, for which the Editor alone is responsible. There has been no attempt, however, to describe in detail developments posterior to 1885. But the Rev. W. H. Hutton has rewritten the last two of his sections on the church; and as regards the closing section on our Colonial Empire, what was written in 1896 had become obviously antiquated since the war in South Africa, and this has therefore been condensed and re-written.

Of the illustrations, I may repeat what was said in the first volume: that the problem has been to find those which had a direct reference to the text. It need not be said that this has required an immense amount of research, and that the difficulty in some cases has been to find any illustration at all, in others to choose among an embarrassing multitude. In the earlier volumes, valuable help was obtained from experts; but in the last three, with the exception of the sections on Art in the present volume, I have suggested the great majority of the subjects myself. And I think it may fairly be claimed by those who are responsible for their final incorporation in the text that they give additional point and emphasis to its statements, and that none of them are merely decorative, or only remotely relevant to the accompanying narration.

In concluding his labours on the original Edition, Mr. Traill recorded our obligations to Mr. A. Hassall, Principal Fairbairn, and Professors Cunningham and Bonney, for their helpful advice in its preparation. As regards this final volume of the illustrated Edition, our sincere thanks are due to the owners and custodians of numerous portraits and other objects of great historical interest for their generous permission to reproduce them in this work. As in previous volumes, the source of each illustration is noted underneath it; but special acknowledgments are due to His Grace the Archbishop of Canterbury, the Earl of Durham, the Earl of Leicester, Earl Spencer, the Earl of Rosse, Lord Aldenham, Lady Chermside, Lord Hawkesbury, the Lords Commissioners of the Admiralty, the Right Hon. Sir Evelyn Ashley, Sir William Huggins, K.C.B., O.M., Sir David Gill, K.C.M.G., the Dean of Westminster, the Hon. John Collier, Professor Hubert Von Herkomer, A. E. Emslie, W. W. Ouless, R.A., and Colonel Le Pelley, Dr. A. Schuster, Dr. H. Woodward, F.R.S., Messrs. Dermod O'Brien, W. C. Hazlitt, Douglas W. Freshfield, A. D. Hall, Herbert A. Bone, Lowes Dickinson, J. H. Gurney, C. J. Guthrie, C. L. Reade, J. M. Ludlow, H. M. Marshall, Thomas Burt, M.P., George Howell, Sidney Webb, Dr. Sophie Bryant, Miss Miller, and Mrs. Mansel. We are also indebted to the Elder Brethren of Trinity House, the Dean and Governing Body of Christ Church, Oxford, the Heads and Fellows of Trinity College, Emmanuel College, St. John's

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J. S. Mann.

August 5, 1904.

ULYSSES DERIDING POLYPHEMUS, BY J. M. W. TURNER, R.A.

(National Gallery.)

Social England

CHAPTER XXI.

PEACE, RETRENCHMENT, AND REFORM. 1815-1832.

H. D. TRAILL. Introductory.

With the Battle of Waterloo and the peace which followed it the nineteenth century may be said, for Europe at any rate, to have begun. Its first fifteen years belong of right to that preceding century which, at its death, had left behind it an "estate" of unsettled political problems and fierce international contentions, which it took half a generation to wind up. The exhausting and almost unbroken war of twenty years, which Waterloo brought to a close, must be regarded as one long trial of the great issue raised by the French Jacobins, and taken up by their suppressor and successor—one continuous prosecution of that far-reaching quarrel into which all the European States, from the greatest to the smallest, were successively drawn, and which for our own country became in its later stages an actual fight for existence. During the years of this life-and-death struggle, when all the energies of the nation were concentrated on the work of self-preservation, social progress was of necessity to a great extent arrested. Trade and industry were immensely but variously influenced, the disastrous effects of the long war upon them in some of their forms being but ill-balanced by the artificially inflated prosperity which it imparted to others (pp. 112, 116). Political movements which had seemed almost within measurable distance of success when the excesses of the French Revolution let loose a flood of reaction against them in the last years of the eighteenth century, were held in check by the great European conflict for well-nigh twenty years. In religion, in science, and even to some extent in literature

itself, the effect of these formidable preoccupations is to be noticed, and their consequences, direct and indirect, are noticeable even after the pressure is removed. England had still to fight her way through the desperate financial complications that the war had left behind it, and to grapple with the almost revolutionary disorders in which they in their turn were prolific before her various faculties again had time and freedom to expand. It was not, indeed, till the century had run a third of its course that England, and Europe generally, entered upon that extraordinary career of political and social, industrial and commercial, and above all, of scientific, development of which the end is not yet, but which has already secured for it a unique place among the ages of the world.

LLOYD C. SANDERS. Political History.

THE Liverpool Ministry was ill-fitted to deal with the "condition-of-England" questions that thrust themselves forward after the Peace of 1815. It contained some ability, but little harmony, and its finance was wretched. The export trade recovered but slowly, owing to the exhaustion of the Continent. At home there ensued a series of disastrous harvests, together with the stress of foreign competition. Mr. Vansittart, the Chancellor of the Exchequer, made no attempt to cut down expenditure, beyond a slight reduction of the Civil List. The agricultural interest forced through a Corn Law which prohibited importation until the price of wheat reached 80s. a quarter (p. 118).

Disturbances at Home.

The working classes promptly took to rioting. In the eastern counties the labourers burnt ricks (p. 119); in the manufacturing towns the artisans destroyed machinery. Some dangerous revolutionists made use of the Spencean Philanthropists (p. 120) to organise a conspiracy for establishing a Committee of Public Safety and seizing the Tower of London. Their meeting at Spa Fields was, however, an egregious failure. After a stone had been hurled at the Regent's carriage, when he went to open Parliament, the Government proceeded in 1817 to suspend the Habeas Corpus Act. Nevertheless the north was alive with discontent. The Blanketeers set forth from Manchester to march on London, and "Captain" Brandreth raised an insurrection at Derby. Two years later an attempt to

suppress a Radical meeting in St. Peter's Field, near Manchester, was bungled by the magistracy, and the troops, riding over the people, caused the so-called Peterloo Massacre. The Government, which had already failed to secure the conviction of Hone, the bookseller, for his political parodies, proceeded to pass the Six Acts. They aimed at suppressing sedition, alike on

LORD LIVERPOOL, BY JOHN HOPPNER, R.A.
(By permission of the Right Hon. F. J. S. Foljambe.)

the platform, the press, and in the field, and Lord Sidmouth, the Home Secretary, rigidly enforced them.

The Holy Alliance.

Abroad, the military powers, under the leadership of the sentimental Czar Alexander, had formed the Holy Alliance, nominally to support Christian principles of government, but really to keep under popular movements. It received little support from Lord Castlereagh, the Foreign Secretary, and thus England stood more or less isolated.

Death of George III.

The long reign came to an end at last, for on January 29th, 1820, George III. died. The dynasty was undoubtedly unpopular with the middle and lower classes. Princess Charlotte, the Regent's daughter and the hope of the nation, had died in

1817, after what promised to be a happy marriage with Prince Leopold of Saxe-Coburg. On the other hand, of the various members of the royal family who had rushed into alliances, the Duke of Kent had become the father of Queen Victoria, born May 24th, 1819.

The new reign began with the detection of a plot to murder

Photo: Walker & Cockerell.

LORD CASTLEREAGH, SECOND MARQUESS OF LONDONDERRY, BY SIR T. LAWRENCE, P.R.A.

(*National Portrait Gallery.*)

The Cato Street Plot.

ministers at a Cabinet dinner and seize the Bank of England and the Tower. Its leader was Thistlewood, who had been at the back of the Spa Fields affair, and it met in Cato Street (now John Street), Edgware Road. As usual the Home Office was warned by an informer, and the ringleaders were duly hanged.

Queen Caroline.

The return of Queen Caroline, from whom the king had been separated since 1814, brought fresh discredit on the royal

THE CATO STREET CONSPIRATORS SURPRISED, Feb. 23rd, 1820.
(From the contemporary drawing by George Cruikshank.)

house. Coming back from abroad to assert her rights, she was met by a Bill, introduced by Lord Liverpool, under pressure from George IV., for the dissolution of her marriage. The evidence produced before the House of Lords certainly convicted her of astounding disregard for propriety; but it had no effect whatever on the London mob, which persisted in regarding her as a deeply wronged heroine. The majorities for the Bill dwindled, and it was dropped after its third reading in the Peers. Soon afterwards, however, her hold on public sympathy began to relax; a foolish attempt to force her way into Westminster Abbey on the occasion of the king's coronation completed the popular disillusionment, and in August she died. The crowd rioted round her coffin as it was being conveyed through London. The king went on his way to Ireland, where, to the disgust of the Whigs, he was received with boisterous loyalty. In the following year he showed to more credit in Edinburgh. But he could not face London, and soon shut himself up in the Brighton Pavilion, a prey to his whims and his attendants.

The Ministry Strengthened.

Warned by recent events, Lord Liverpool resolved to reconstruct his Ministry. In 1822 Lord Sidmouth retired, and was succeeded by Robert Peel, who had already made his mark as Chairman of the Bullion Committee, which recommended the resumption of cash payments. Later in the year Lord Castlereagh (now Marquis of Londonderry) committed suicide on the eve of his intended departure for the Congress of Verona. He was replaced by Canning, and two of Canning's friends also joined the Government: Robinson as Chancellor of the Exchequer, and Huskisson as President of the Board of Trade.

Canning and the Holy Alliance.

Canning promptly tried a fall with the Holy Alliance, which had determined to put down constitutionalism in Spain. He sent the Duke of Wellington to Verona with instructions to protest against any interference. The duke went so far as to withdraw from the Congress, but a French army was nevertheless despatched across the Pyrenees. With supreme adroitness Canning converted the rebuff into a diplomatic triumph. He hastened to recognise the revolted Spanish colonies, or—to use his own rhetoric—he "called the new world into existence to redress the balance of the old." And when Spain desired to suppress the constitutional cause in Portugal, Canning intervened with decision. Within four days an expedition was

despatched to plant the British flag on "the well-known heights of Lisbon," and Ferdinand VII. withdrew the troops that he sent in support of the absolutist Dom Miguel. As a matter of fact Canning's policy was less of a departure from Lord Castlereagh's than is generally supposed, but he acted more freely, because he was unhampered by private friendships with Metternich and other Continental statesmen.

The Marquis of Hastings, Governor-General from 1814 to 1823, had enlarged the frontiers of India. Driven by frontier raids to invade Nepaul, the British troops defeated the Goorkhas and wrung from them hill-districts, which included the healthy station of Simla. In Central India the marauding Pindaris were chastised, and in 1817 and the following year Lord Hastings tried conclusions with their sympathisers, the Mahrattas; Holkar, the leading spirit in the confederacy, was heavily defeated at Mehidpore, its nominal head, the Peishwa, was deposed and his dominions annexed. The submission of the Rajputs rounded off the Presidency of Bombay. On Hastings' successor, Lord Amherst (1823–28), fell the responsibility of resisting Burmese aggression. The war was tedious, and the troops were decimated by the climate. In 1826, however, the king surrendered by treaty Assam, and the districts of Arakan and Tennaserim. Lord William Bentinck's Governor-Generalship (1828–35) was unmarked by military expeditions on a large scale. He suppressed Suttee, however; exterminated the Thugs; and appointed a Commission which, with Macaulay as its President, codified the Indian law.

Photo: Walker & Cockerell.
RT. HON. GEORGE CANNING, M.P.,
BY E. H. BAILY, R.A.
After a bust by Joseph Nollekens, R.A.
(*National Portrait Gallery.*)

India.

At home the new element in the Government was doing excellent work. The Home Secretary set himself to reform and consolidate the criminal law, abolishing the penalty of capital punishment for nearly a hundred felonies. Robinson set aside the sinking fund, reduced the interest on the war

Domestic Reforms.

debt, and, after the commercial crisis of 1825 had tried credit very severely, he countenanced the creation of joint-stock banks, and prohibited the issue of £1 and £2 notes (p. 122). His financial policy, which, though within limits, proved a distinct advance on Vansittart's was supposed to be largely influenced by Mr. Huskisson. That able man modified the Navigation Acts by carrying a Reciprocity of Duties Bill, whereby foreign nations were offered an equality of trade with this country. He also lowered the duties on silk and wool, and so gave a considerable impetus to both industries.

The Liverpool Ministry had gone far to recover its popularity with the country. But the "pigtail Tories" were infinitely disgusted, and even went so far as to oppose Mr. Canning's friends at the polls. On the 7th of February, 1827, Lord Liverpool had a stroke of apoplexy, and with his death the divisions of the party became past healing.

The Canning and Goderich Ministries.

There were two possible Prime Ministers, Peel and Canning, but neither would serve under the other. To his great disgust, the king was compelled to send for Canning, whom he disliked on personal grounds. Peel and the Duke of Wellington promptly resigned their offices, though Catholic Emancipation was still to remain an open question. Canning got together a Ministry of his personal friends, and he was afterwards joined by Lord Lansdowne and other Whigs. He was badly beaten in the Lords on a Bill for graduating the corn duties, and on August 8th died, his last days having been embittered by paltry strife. Robinson, become Lord Goderich, attempted to carry on the rickety Government. Its members, however, quarrelled violently, and at last that "transient and embarrassed phantom," its nominal chief, went to the king and resigned in tears. In January, 1828, the Duke of Wellington formed a Ministry, with Peel as his Home Secretary, and a Canningite element, including Huskisson, Lamb, Palmerston, and Grant.

Navarino.

The duke had promptly to deal with the Eastern question in a very acute shape. The Greeks had revolted against Turkey, and their cause aroused genuine, if exaggerated, sympathy in this country. It appeared hopeless, however, when Mehemet Ali, the Viceroy of Egypt, sent an army under his son, Ibrahim Pasha, to help the Sultan. Russia and England had long been striving after a point of union, and, after the

Porte had refused an armistice, Lord Dudley, the Foreign Secretary of the Canning Ministry, had signed the Treaty of London, whereby the two Powers and France pledged themselves to enforce a cessation of hostilities. Vague orders were

NAVARINO—AN UNTOWARD EVENT.
(*From a contemporary satirical print.*)

sent to Admiral Codrington, who commanded the Mediterranean Squadron, and he remained at anchor while Ibrahim Pasha ravaged the Morea. When, however, the Turkish fleet attempted to issue from Navarino Bay and fired on the British flag-ship, the allies replied in good earnest, and gained a complete victory (October 27th, 1827). The duke was far from relishing this "untoward event," as it was styled in the Queen's Speech. Instead of sending the British fleet to

Constantinople, he allowed Russia to prosecute the war alone, and wring the Treaty of Adrianople from the Turks. The limits of independent Greece were fixed by the allies in London, and they were far from satisfying Philhellenist aspirations.

Repeal of the Test Act: Catholic Emancipation.

At home the Government had no settled policy. Lord John Russell forced upon it the Repeal of the Test and Corporation Acts in February, 1828, and thus removed a Nonconformist grievance. The Canningites had threatened revolt, and in May they resigned in a body over the question of the assignment of the seats of the disenfranchised borough of East Retford. Want of tact on Mr. Huskisson's part, rather than a deliberate intention on the Duke's to shed the more Liberal members of the Ministry, was probably the cause of the rupture. Still, they went. Wellington's followers were soon compelled to surrender the chief principle on which the administration rested, namely, that of resistance to Catholic Emancipation. This legacy from the Union had frequently come before the House of Commons Resolutions in favour of the Catholics had passed, only to be rejected by the Lords. The question became far more acute when its control in Ireland passed from the hands of an easy-going, aristocratic committee into the vigorous direction of O'Connell (p. 146). He formed the Catholic Association, and began to collect the Catholic rent in 1823. His meetings were perfectly orderly, but they were inevitably calculated to provoke Protestant reprisals, and his lieutenants were none too discreet. Suppressed by law, the Association reconstituted itself as an educational and charitable combination. At the general election of 1826 O'Connell's candidate was returned for County Waterford, despite the Beresford interest. In the following year O'Connell, though ineligible, stood in person for Clare, against Mr. Vesey Fitzgerald. The forty-shilling freeholders deserted the landlords, and on the fifth day of the polling O'Connell's opponent withdrew.

The duke paused irresolutely between surrender and revolution. He compelled Anglesey, the Lord Lieutenant, to resign for blurting out his differences with the Government to O'Connell. But by the meeting of Parliament Peel's commonsense got the upper hand. As a preliminary Peel insisted

FUNERAL OF THE CONSTITUTION, 1829

(From a contemporary satirical print.)

upon the suppression of the Association, but it anticipated him by dissolving. The religious scruples of the king nearly wrecked the Government, but he was forced, in the end, to ask Ministers to remain. Peel, who, rejected by Oxford University, with difficulty found a seat at Westbury, was at last free to carry his Bills. They admitted Catholics to Parliament and office with the exception of the Lord Chancellorship and Viceroyalty of Ireland, while, as a safeguard, the Irish franchise was raised to £10. After a final struggle with the king, they became law. But agitation had taken deep root in Ireland, and O'Connell promptly began to harangue the peasantry on the repeal of the Union.

Wellington's Foreign Policy.

The duke was strongly in favour of non-intervention abroad. Hence he was rather unjustly accused of countenancing absolutism. He refused to interfere in Portugal, where Dom Miguel had, for the moment, succeeded in ousting his niece, and even prevented a loyalist expedition, fitted out in British ports, from landing on the Azores. His attitude was diplomatically correct, but it was liable to misconstruction. Even more damaging was his supposed dependence on the judgment of the Prince de Polignac, the reactionary Minister who was swept away by the French Revolution of July, 1830.

Death of George IV.

George IV. ended his useless life on June 26th. He was succeeded by his brother William IV., whose eccentricity was counterbalanced by his honesty. He sympathised at the outset with the cry for reform which, under stress of the upheaval abroad, was ringing through the land. Wellington was the only politician who could deal with George IV., and his death removed the chief reason for the continuance of the Ministry. The duke made overtures to the Canningites, but the death of Huskisson, who was killed at the opening of the Liverpool and Manchester Railway (p. 276), altered the situation, and they made common cause with the Whigs. On the opening of Parliament in November, 1830, the duke made an emphatic declaration in favour of the existing system of representation. After that the Government was hopelessly compromised; it was defeated on Sir Henry Parnell's motion for a select committee on the Civil List, and resigned.

The Grey Ministry.

Lord Grey, though nearly seventy years old, was the inevitable Prime Minister. Several Whigs entered the Cabinet:

Lord Lansdowne as President of the Council, Lord Althorp as Chancellor of the Exchequer, and, eventually, Lord Brougham as Chancellor. Lord Durham, the Lord Privy Seal, called himself a Radical. The Canningites secured the secretaryships —Lord Melbourne (Lamb), Palmerston, and Goderich going to the Home, Foreign, and Colonial Offices respectively. The

Photo: Walker & Cockerell.

WILLIAM IV.

(*National Portrait Gallery.*)

Ministry was strong in talent, but weak in administrative experience.

The Reform Agitation.

It was an anxious winter. There was rick-burning in the agricultural districts of the South. The artisans were moving in the North, and the violent language of the Birmingham Political Union was calculated to breed trouble. In Ireland one-fifth of the population was out of employment, and a tithe war was proceeding simultaneously with O'Connell's agitation for repeal. Melbourne, who as Home Secretary had control both of English and Irish affairs, behaved with firmness. The Birmingham League was left alone; but the rural rioters

were tried by a special commission. The Marquis of Anglesey, the Lord Lieutenant of Ireland, suppressed O'Connell's meetings, and finally arrested him, though the Act under which he was convicted expiring with the dissolution, he was never sentenced.

The First and Second Reform Bills.

On March 1st, Lord John Russell, the Paymaster of the Forces, brought in the Reform Bill. It proved too sweeping to please the House, and, after passing its second reading by a majority of one, suffered defeat in Committee on a proposal to reduce the number of members. Ministers decided not to resign, and induced the king to consent to a dissolution. They returned with a majority of over 130, and a new and still more thorough-going Bill was promptly introduced. Though the Opposition debated the measure at inordinate length, it passed through the Commons by large majorities. On October 8th the Lords rejected it on the first reading by 41. Rioting began immediately in the large towns, and at Bristol the weakness of Colonel Brereton gave the mob the upper hand for forty-eight hours. Supported, however, by a vote of confidence in the Lower House, Ministers decided to continue in office.

The Final Bill.

In March, 1832, Lord John Russell carried a third Bill through the Commons. Through the influence of the "Waverers," led by Lord Wharncliffe and Lord Harrowby, it passed its second reading by a majority of nine. In Committee, however, Lord Lyndhurst persuaded the Peers to vote for his motion postponing the disfranchising clauses. The Prime Minister had no other course than to press on the king the necessity of creating a batch of Peers, and, on his refusal, resigned. Wellington undertook the desperate task of forming a Cabinet of resistance to revolution. He failed to secure the support of Peel, and retreated from an untenable position. The renewed activity of the "Waverers," and a circular letter of the king's praying the Peers to cease their opposition, put an end to the crisis. On June 4th the Bill was free of the House of Lords.

Its Provisions.

In its final shape the Act disfranchised 56 boroughs with less than 2,000 inhabitants, returning 111 members, took a member from 30 boroughs with less than 4,000, and deprived one four-member constituency of two of its representatives.

Of these 143 seats, 65 were given to the counties; 22 large towns, including Manchester, Birmingham, and Leeds, received two members, and 21 smaller places one. Of the remaining 13 seats ten were transferred to Scotland, the other three being reserved to increase the Welsh representation. Copyholders, leaseholders, and tenants-at-will paying a £50 rent received the county franchise.[1] In the boroughs a uniform £10 household franchise was established, though the rights of resident freemen were respected. In the same session Reform Bills were passed for Scotland and Ireland. The first country received eight new members, while all owners of property, long leaseholders at £10 a year, and £50 tenants-at-will acquired the franchise. Ireland had five additional borough members, but the 40s. freeholders remained voteless.

W. LAIRD CLOWES. The Navy. Effects of the Peace.

In 1814, when the long Napoleonic war was, for the moment, terminated by the departure of Bonaparte for Elba, and by the return to France of Louis XVIII., Great Britain remained in hostilities with the United States of America, and was thus prevented from at once reducing her Navy to its ordinary peace establishment. She was enabled, however, to dispense almost immediately with the services of no fewer than 50,000 seamen. In the following year, although the fratricidal war with America was ended (Vol. V., p. 713), the reappearance of Napoleon in the field rendered any further reduction of armaments impossible, and during the greater part of that year 90,000 men had to be kept in readiness to serve their country at sea. But when 1815 was past and over, and when European peace seemed to be securely re-established by the banishment of the great disturber of it to a distant island, wholesale reductions were effected. The extent and nature of these will be clearly understood from the following comparative statement of the number of ships in commission, and of the number of seamen nominally in service, at the conclusion of each of the years 1813, 1814, 1815, 1816, and 1817:—

[1 "By this provision, the power of the great landed proprietors over their tenantry is perpetuated: and thus arises a greater frustration of the purposes of the Act than from all other errors and faults together." Martineau, *Europe since the Peace*, I., 70. The clause was an amendment proposed by the Marquis of Chandos.]

Ships in Commission.	1813.	1814.	1815.	1816.	1817.
Of the Line-of-Battle ...	99	47	30	14	13
Cruisers	495	392	213	100	89
Special Service Vessels ...	50	46	27	10	12
Total Ships ...	644	485	270	124	114
Seamen and Marines Serving	140,000	90,000	90,000	33,000	19,000

Thus, within the short space of four years, 530 ships of war were laid up or finally disposed of, and 121,000 seamen were thrown out of employment. The number of officers placed upon half-pay was, of course, proportionate. Leaving out of calculation the other ranks, we may fairly gauge the situation after a survey of the condition of the active list of the lieutenants. At the end of 1813 there were 3,285 of those officers; at the end of 1814, 3,211; at the end of 1815, 4,064; at the end of 1816, 4,012; and at the end of 1817, 3,949; so that there were positively more officers available for employment and consequent full pay in 1817, when but 114 vessels of all classes were required for the public service, than there had been in 1813, when 644 vessels were needed. Very little reflection will show that if every one of the lieutenants was employed in 1813, at least 3,350 must have been unemployed in 1817; and that if there were any unemployed lieutenants in 1813, the number unemployed in 1817 must have been even greater than 3,350. This state of affairs gave rise to an incalculable amount of misery among all classes throughout the country. The disbanded seamen had, with few exceptions, no resources whatsoever—possibly, in most cases, not even a trade to fall back upon. The case of the officers was almost as bad. The peace not merely deprived all of them of practically every prospect of prize-money, but also suddenly reduced the regular emoluments of upwards of 80 per cent. of them in the following proportions: Admirals, from £5 to £2 2s.; vice-admirals, from £4 to £1 12s. 6d.; rear-admirals, from £3 to £1 5s.; captains, from (in some instances) £2 3s. 10d. to 14s. 6d.; commanders, from 16s. 6d. to 8s. 6d., or, at best, to 10s.; and lieutenants to, in the vast majority of cases, as little as 5s. a day. In no case could a half-pay lieutenant expect to receive more than 7s., a sum which is equal to £127 15s. a year; and unless he

happened to be high up on the list, the prospect opened to him by the peace was one of having to support himself as a gentleman, and probably to support a wife and family as well, on an annual income of £91 5s. If further evidence be needed of the disastrous effects of the inevitable reduction of the naval establishment upon the pecuniary prospects of the individuals who, for upwards of twenty years, had kept Great Britain from the misfortunes of foreign domination, and had maintained her honour in every sea, it may be discovered in the figures of the

THE EMIGRATION OF OFFICERS.
(*From a satirical print of* 1828.)

Naval Estimates of the years immediately before and immediately succeeding the peace. The supplies voted for the sea-service were, in 1813, £20,096,709; in 1814, £19,312,070; in 1815, 19,032,700; in 1816, £10,114,345; in 1817, £7,645,422; and in 1818, £6,547,809.

These reductions were necessary enough; but the effect of them was almost equivalent to the temporary ruining of the naval profession. Seamen, idle from no fault of their own, thronged the streets of the large towns; and although many obtained engagements in the mercantile marine, there were still enough left ashore to form the nucleus of much disorder, and to materially assist in fanning popular discontent. As for the

officers, most of them either starved genteelly at home, or went abroad to seek to retrieve their shattered fortunes. Grants of land in various colonies drew away a certain number of them, naval as well as military, and helped in the peopling of Australia and Canada; but not every half-pay officer possessed the capital to enable him to take up a grant of land, or the inclination to settle down into the peaceful and monotonous pursuits of country life in an undeveloped district. This condition of things produced results the importance of which is universally acknowledged, but the history of which is now generally lost sight of.

British Officers in Foreign Service.

At the time of the peace, and indeed, for many years afterwards, the echoes of the French Revolution were still resounding loudly throughout a great part of both worlds (pp. 6, 9). The colonies of Spain and Portugal were beginning to be restless under the somewhat selfish dominion of the mother countries; Greece was painfully excogitating her independence; and soon many officers and men whose professional future in England had been so seriously compromised were found, serving, it is true, as mercenaries, yet ranged on the side of human progress and liberty, and furthering the advance of freedom and civilisation. Lord Cochrane, afterwards Earl of Dundonald, who had been unjustly deprived in 1814 of his commission in the Navy (although he was, happily, restored in 1832 to his rank and honours), was the most distinguished of these maritime adventurers and sailors of fortune. He carried out with him to Chile in 1818 a number of unemployed officers, most of whom won glory, and some riches as well, in the course of the struggle there, in Peru, and in Brazil, for the liberation of South America. Lord Cochrane had similar companions when subsequently he assisted the Greek revolutionary patriots. What he did for Chile and Brazil few other men of his day could have effected with such scant means as the feeble insurrectionary governments of those times were able to place at his disposal; and it is satisfactory to know that the memory of his work is kept alive in Chile to this day by the conferring of his name upon a battleship; and that in Brazil, at least until the fall of the Monarchy, he and his successors bore the title of Marquis of Maranhaõ. Among names which deserve to be associated with his in these exploits are those of Crosbie, Foster, Hind, Taylor, Jowett, Grenfell, Guise, and Spry; but scores of others might be men-

tioned; and, in fact, for many years after 1815, there was no war in the New World or in the Old in which, as adventurers, the half-pay veterans of our own long struggle with France did not take part. The practical disbanding of those tried and gallant

LORD COCHRANE, EARL OF DUNDONALD.
(*After the painting by P. E. Stroëhling.*)

fellows at the peace had a far wider influence than is commonly suspected both upon the development of what are now the large self-governing colonies, and upon the constitutional growth of much of the rest of the world.

Promotion Blocked.

Another result of the peace was the previously unparalleled blocking of promotion in the various commissioned grades of the naval service. So long as war lasted there was possible promotion, at least as far as post-rank, for all; and, from 1793

to 1815, deserving officers were seldom neglected for long by those with whom lay the selection. But the very readiness of the Admiralty to reward good service during war-time led in peace-time to considerable personal hardships, besides being in some instances distinctly antagonistic to the public welfare. The promotions consequent upon the happy conclusion of hostilities brought the captains' list up to 883, the highest point it has ever attained since a British Navy has existed. At the time when that maximum was reached—it was in 1818—the senior captain on the list had held that rank for twenty-two years, a period more than long enough, consistently with the best interests of the service, to qualify for flag-rank and command. Yet twenty-two years was a very short period in comparison with the time for which officers who at the peace were captains of medium or junior standing had to wait ere they attained flag-rank. The evil reached its height in 1841. In the earlier part of that year all the captains at the head of the list were men who had held post-rank ever since the year after Trafalgar. The senior one of them, judged by the date of his commission as captain was sixty-eight years of age; several were over seventy; and one, at least, was as much as seventy-eight. Yet it was from among these old gentlemen that the list of admirals had to be recruited; for then, as now, promotion to flag-rank went by simple seniority; and, to make matters worse, there was at that time no regular scheme of retirement for officers above the rank of commander. The consequence was that almost all the admirals, besides a large number of captains, were too old to be in a condition to render effective service in their profession; and the political caricaturist was justified, a little later, in representing the typical commander-in-chief of the period as a gouty veteran, obliged to promenade his quarter-deck in a bath-chair. Both Sir J. C. White and Vice-Admiral Edward Harvey were seventy-four when they took up the command at the Nore; Admiral Bowles was seventy-nine when he became port-admiral at Portsmouth; Sir David Milne was of the same age when he assumed the like office at Devonport; and, even on foreign stations, Sir Robert Stopford flew his flag at seventy-three; Sir Peter Halkett, at seventy-two; Rear-Admiral C. J. Austen, at seventy-three; and Lord Dundonald, at seventy-five. And, in spite of

such facilities as existed in 1841 for the retirement of officers of rank less than that of post-captain, the active lists were still choked throughout with old officers, survivors of the French wars. Of this category, there were about 200 commanders and 1,450 lieutenants who had received no promotion whatsoever for a period of twenty-six years or more. One officer had been a commander for forty-seven years; another had been a lieutenant for sixty years; yet another had been a master for sixty-one years; and there was a purser with sixty-four years' service in that rank to his credit. All these officers, however, were set down in the Navy List as being fit for duty.

Naval Retirement.

It was the existence of this extraordinary state of affairs that induced the Admiralty to adopt a more reasonable and comprehensive scheme of naval retirement than had previously been in force. As early as 1816, not to go farther back, 100 of the senior lieutenants who, owing to age and infirmities, were assumed to be incapable of further service, had been permitted to retire with the rank of commander and a pension of 8s. 6d. a day; and in 1830 another Order-in-Council had authorised the retirement of lieutenants of sufficient seniority to be in receipt of half-pay at 7s. a day. But these measures had thinned the lower ranks only to a partial extent, and had left the equally crowded upper ranks untouched. A further step was taken in 1840, when fifty of the senior commanders were allowed to retire with the rank of captain and with half-pay of 10s. 6d. a day. Yet still the tension remained unrelieved until the elaboration of a more general scheme, which was published in the *London Gazette* of September 1st, 1846, and became part of the regulations under an Order-in-Council of April, 1847. This measure permitted the retirement, as rear-admirals, of captains whose seniority placed them on the 14s. 6d. half-pay list; the retirement, with increased pay, of certain other captains of not less than twenty years' seniority; and the reduction to manageable proportions of the active list. New Orders-in-Council followed in 1851, 1856, 1860, 1864, and 1866; and in 1870 a complete fresh scheme for all ranks was at length adopted. This, although it has since been considerably modified, remains the basis of the present system of naval retirement. It may be said that the schemes, just and salutary upon the whole, which thus received, as it were, their

codification in 1870, were the direct outcome of the long and trying wars of the beginning of the century. Nothing, indeed, is more certain than that for successful commanders at sea in war-time the country must look chiefly to the officers who are still in, or below, the prime of life; and that the best interests of the service require that it should be possible for capable officers to reach flag-rank by the age of forty, as Nelson did.

The Navy in the Crimean War.

Some of the evil consequences of the neglect and procrastination of the Admiralty in dealing with the situation bequeathed to us by the war which ended in 1815 appear to have hampered the country when, nearly forty years later, war broke out with Russia. During that war the Navy, all things considered, effected remarkably little; and the expectations of the country were notoriously disappointed. The excessive age of many of the flag-officers and captains who were entrusted with commands may be accepted in partial explanation of the result. Both Napier and Dundas were nearly seventy; and Lyons and Price, though only rear-admirals, were sixty-six; while several captains, both in the Black Sea and in the Baltic, were upwards of sixty years of age. From officers of such advanced life, the energy, activity, and mental suppleness that distinguish capable younger men cannot be expected. The sea, moreover, is an exceptionally wearing calling, and was even more so in the first half of the century than it is now. This has since been to some extent recognised in our own and other Navies. A British admiral is now obliged to retire at sixty-five, and a rear-admiral at sixty. In Germany, even these ages are considered too great to admit of full efficiency. There, no officer can remain on the active list after he is fifty-six; and rear-admirals are perforce retired at fifty-three.

Rating of Ships.

It is important for the student of naval history to understand the principles according to which British ships of war were "rated" at various times, and what, in the days of our wooden walls, was the real meaning of such expressions as "a 36-gun frigate," "a seventy-four," and so on. As a great and sensible, if not entirely satisfactory, change in the system of rating was introduced in 1817, immediately after the peace, the present seems to be a convenient opportunity for dealing with the subject.

In the seventeenth century, and in the first three-quarters of

the eighteenth, a vessel was rated and described according to what may be regarded as the natural plan; that is, if she actually carried 60 guns, she was known as a 60-gun ship. But in 1779, when the carronade was made a regular service weapon, nearly all vessels were given a certain number of these pieces of ordnance, in addition to their complement of guns. For instance, the 100-gun ships were given 10 carronades; 90- and 98-gun ships were given 10 also; 74-gun ships were given 8; 50-gun ships were given 10, etc. To put the matter more concisely for purposes of reference, the true gun strength of the chief classes of ships, as distinct from the conventional gun strength, became as follows:—

Rate.	Nominal Guns.	Actual Guns.
First	100	110
Second	98	108
,,	90	100
Third	74	82
,,	64	72
Fourth	50	60
Fifth	44	54
,,	38	48
,,	36	44
,,	32	40
Sixth	28	34
,,	24	34
,,	20	28
Sloops	18	26
,,	16	24
,,	14	22

Yet, in spite of these considerable alterations, ships continued to be officially classed as they had been classed before the change. Other changes in the armament of ships were effected subsequently, not only in consequence of Admiralty orders, but also to suit the theories or temporary wishes of individual captains; so that in course of time the official classification came to be almost meaningless. Any addition of long guns to a ship raised her class in the Admiralty estimate; but no addition of carronades modified her status on the books of the Navy. Thus, when in 1780 the *Canada* received two extra 18-pounder long guns, she rose from the position of a 74 to that of a 76; but when in the following year the *Goliath*, 74, was given, as part of

Anomalies of Classification.

her extra armament, two 68-pounder carronades, she still remained a 74, although the additions made her probably a more powerful ship, especially at close quarters, than the *Canada*. When, therefore, in the history of the French wars, or of the war of 1812, we read that a British ship was officially classed as carrying a certain number of guns, we get little or no guide to her actual offensive strength. The inconvenience of this state of affairs was recognised when the recurrence of peace

MODEL OF H.M.S. *ARIADNE*.
(*Victoria and Albert Museum.*)

enabled the Admiralty to consider the point; and efforts were at once made to remedy it. But the Order-in-Council of February, 1817, was after all only a half-measure; for it merely directed that in future all his Majesty's ships should be rated at the number of guns and carronades which they actually carried on their decks, quarter-decks, and forecastles; and it left out of account the carronades which, in the ships of the three higher rates in the Navy, were carried on the poop. Thus, the *Superb*, 74, though officially promoted to be a 78, should in reality have been promoted to be an 84. Indeed, all the first, second, and third rates, even after the new Order, and the accompanying

MEN-OF-WAR IN PORT, BY W. ANDERSON.

(Victoria and Albert Museum. By permission of T. Dyer Edwardes, Esq.)

declaration that "the force of each ship is stated according to the number of guns and carronades actually carried," continued to mount six more weapons than they were credited with. The *Victory*, 104, was a 110; the *Queen Charlotte*, 108, was a 114; the *Prince*, 98, was a 104; and, in fact, it would appear that the rule had practically no exceptions. These and other anomalies were not entirely got rid of until the promulgation of a new scale of armament in 1847; and even then they were got rid of only for a comparatively short time. Certain guns, especially if of comparatively small size, soon began to be again neglected in the official estimation of a ship's armament; and after armoured vessels became a well-established feature in the Navy small guns were gradually left wholly out of account, until in 1885—the year in which this survey closes—the official Navy List was even more misleading than the official Navy List of 1814 had been. In 1885, for example, one of the most formidable completed ships in the service was the *Collingwood*, which the Navy List described as of 10 guns; and one of the most insignificant was the wooden corvette *Druid*, which was described as of 14. As a matter of fact, the *Collingwood* really carried 35 guns, large and small, and the *Druid* only 22; but that statement by no means reflects the true difference between the force of the ships. The *Druid's* 14 guns, the sole ones which were deemed worthy of official notice, were all 64-pounder muzzle-loaders, of no armour-piercing value whatsoever; the *Collingwood's* 10 guns comprised four 12-inch breechloaders, ranking among the most powerful guns then in the service, and six 6-inch breech-loaders, all more than capable of piercing 10 inches of iron armour at a distance of 1,000 yards, besides 12 guns which were of much greater utility than anything mounted by the *Druid*. Moreover, a single gun in the *Collingwood* weighed very nearly as much as the entire armament of the other vessel.

W. H. HUTTON. The Church.

THE powerful influence which had done so much to mould English religious feeling, and to direct its course along particular channels of opinion during the later years of the eighteenth century, had lost, during the earlier part of the present century, some of its more prominent characteristics. Evangelicalism had abandoned something of its austere spirit, and,

while it had succeeded in arousing among the educated classes a much more serious apprehension of social and religious problems than had been common when Bishop Butler made his famous lament, it had itself been insensibly affected by the society which it had influenced, and tended to become, if not "worldly," at least reasonable, polite, and not unfashionable.

If we turn first to the character of the religious laity of the period, we shall see how strong had been the influence in which they were nurtured, and how in later life it had encouraged the pursuit of an ideal of definite philanthropy. Nor need it be said that this influence was by no means confined solely to those who would have called themselves "Evangelicals," or to members of the Church of England. One of the greatest practical workers for true religion and sound learning was imbued with the older—the Caroline, or Reformation—principles of the Church; while among the pioneers of philanthropic effort were the leading members of the Society of Friends. Foremost among philanthropists was the great Evangelical, William Wilberforce. He it was, more than any other, who by his life-long labours enforced on Parliament, through the education of the popular conscience, the abolition of the traffic in human beings. Evangelicalism, through one of its greatest leaders, George Whitefield, had supported slavery: now from an Evangelical the slave-trade received its death-blow. Wilberforce, through his friendship with the leading statesmen of the day, enjoyed a position of exceptional advantage for the work to which he devoted himself. He was a link between the so-called "Clapham Sect" (the body of wealthy business men and others who circled round the Rev. John Venn, rector of Clapham) and the London society of the day. By his side were peers such as Lord Teignmouth and Lord Dartmouth, and the rich families of the Gurneys and the Buxtons. For literary influence the religious and social movements of the time were indebted to the vigorous and popular writings of Hannah More. This kindly and bright old lady, herself playwright and novelist as well as writer of religious tracts, who is a fit link between the ecclesiastical opinions of such typical English writers as Dr. Johnson and Mr. E. A. Freeman, died in 1832. William Wilberforce (whom J. J. Gurney described as "always in sunshine, his mind strung to a perpetual tune of love and praise") died on

Evangelicalism and other Influences for Philanthropy.

July 29th, 1833, a month before the Bill for the Abolition of Slavery became law (p. 152). There could not be two better examples of the influence of religion and philanthropy on the life of the English nation. The names of both were household words beyond the boundaries of Great Britain. Wilberforce was buried in the Abbey between Canning and Pitt. Hannah More's books were read, it may almost be said, in every English home. The anti-slavery movement represented the best current of English feeling, and was by no means tied to any particular religious body. Fowell Buxton presented a petition for abolition from 187,000 women of Great Britain. Already practical men like J. J. Gurney, and literary artists like Thomas Love Peacock in "Melincourt," had urged the disuse of sugar till the slaves who made it should be freed.

The philanthropy which so warmly espoused the anti-slavery cause was no less powerful in social work within the land. In the winter of 1816–17 Mrs. Fry began her systematic visits to the prisoners in Newgate, in which she was assisted by many ladies, Churchwomen as well as Friends, and which had so remarkable an effect on the nature of prison discipline throughout the country.

Two Lay Churchmen.

Among the laymen who devoted themselves to the theoretical and practical interests of the Church, two should especially be mentioned. Alexander Knox, well known in his earlier life as a political writer, in later years was prominent in defence of the Church. His especial work it was to defend the teaching of the Church as embodied in the Prayer Book—a task which had a distinct value when great laxity as to standards of doctrine and worship prevailed. He died on January 17th, 1831. More active in good works was Joshua Watson, who did great things for the literature and the missions of the Church in connection with the Societies for Promoting Christian Knowledge, and for the Propagation of the Gospel in Foreign Parts. Through his energetic devotion the interests of religion were continually supported in Parliament. He became the constant adviser of the Archbishop of Canterbury (Manners-Sutton), and it was not a little through his influence that many new Church societies were founded, and that the colonial episcopate was organised and endowed.

Of the clergy of this period two very different pictures might be drawn. They might be described as secular, though kindly and generous, as scholars and gentlemen rather than missionaries and priests. The novels of Peacock, of Jane Austen and George Eliot, sketch clergymen of varying types which might fall within this description. Certainly we should not greatly wrong them if we wrote across the clergy list, "*surtout point de zèle.*" The "high and dry" school had principles which connected it with a great past. It "inherited the traditions of a learned and sober Anglicanism, claiming as the authorities for its theology the great line of English divines from Hooker to Waterland, finding its patterns of devotion in Bishop Wilson, Bishop Horne, and the 'Whole Duty of Man,' but not forgetful of Andrewes, Jeremy Taylor, and Ken—preaching, without passion or excitement, scholar-like, careful, wise, often vigorously reasoned discourses on the capital points of faith and morals, and exhibiting in its adherents, who were many and important, all the varieties of a great and far-descended school, which claimed for itself rightful possession of the ground which it held. There was nothing effeminate about it, there was nothing fanatical; there was nothing extreme or foolish about it; it was a manly school, distrustful of high-wrought feelings and professions, cultivating self-command and shy of display, and setting up as its mark, in contrast to what seemed to it sentimental weakness, a reasonable and serious idea of duty."[1] To that school belonged great scholars like Dr. Routh, great prelates like Bishop Van

The Clergy.

Photo: Walker & Cockrell.

MRS. ELIZABETH FRY, AFTER C. R. LESLIE, R.A.

(*National Portrait Gallery*).

High Church.

[1] Dean Church, "The Oxford Movement," pp. 8–9.

Mildert of Durham, and—most striking example of all, and occupying its position when it had been largely abandoned on both sides—the great parish priest, Walter Farquhar Hook, who carried on its tradition to a much later generation.

Evangelicals.

The Evangelical party, on the other hand, had a body of theology which was less wide, but certainly not less sincere. They were led by men such as Charles Simeon, the influence of whose strong character and long and blameless life gave to his opinions a prolonged and almost unquestioned supremacy in the University of Cambridge. This school was stronger in sentiment and personal piety than in theology; and from it, a few years later, came "almost all the first important converts to Rome."[1] It was powerful in the support of rich lay folk, and started what Sydney Smith called "a regular fund to purchase livings for those groaning and garrulous gentlemen whom they denominate (by a standing sarcasm against the regular Church) gospel preachers and vital clergymen"; yet "the deepest and most fervid religion during the first three decades of this century was that of the Evangelicals."[2]

Two facts are especially significant in the religious history of this period. The first is the strong movement, somewhat hastily identified with the Liberalism of the day, against religious establishments in general and the Church in particular. The second is the formation, below the surface, of a new and vigorous party of reform on the lines of traditional Church teaching.

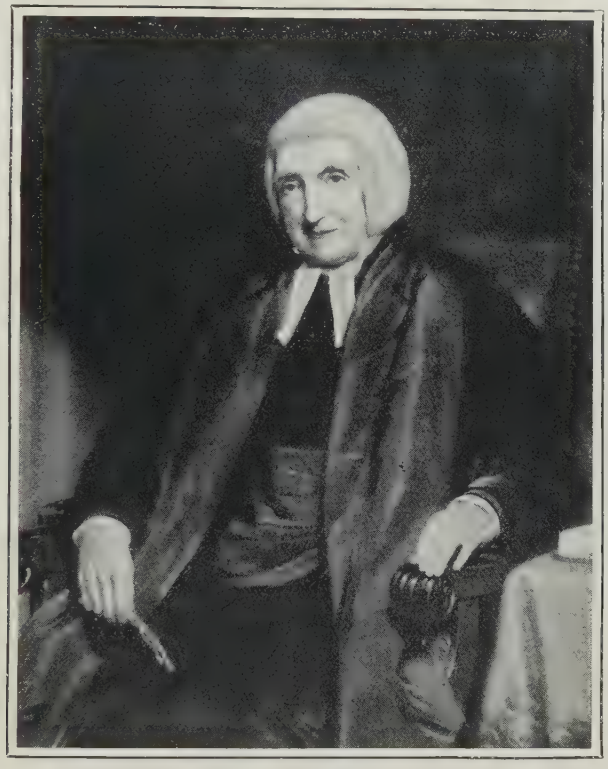
Fears for the Establishment.

It would be difficult to exaggerate the alarm with which timid Churchmen regarded the future at the period of the Reform Bill of 1832. "The Whigs had come into power; Lord Grey had told the bishops to set their houses in order, and some of the prelates had been insulted and threatened in the streets of London."[3] Several Irish bishoprics had been suppressed. Dr. Pusey, then known only as a young and very learned Oxford professor, expressed to Mr. Gladstone, who had just entered Parliament, his sense of the dangerous appearance of public affairs—"The appearances of things are very formidable, if a Christian might fear." Men of less caution and restraint felt still greater alarm. Dr. Arnold, the great school-

[1] Archdeacon Perry, "Church of England," 3rd period, p. 195.

[2] Liddon, "Life of Pusey," vol. i., p. 255. [3] Newman, "Apologia," p. 30.

master, who had such enormous effect on the religion of the next generation, wrote, in 1832, "The Church as it now stands no human power can save." In his pamphlet, "The Principles of Church Reform," Dr. Arnold proposed to make the Church once more identical with the State, by admitting all



DR. MARTIN JOSEPH ROUTH.
(*After H. W. Pickersgill, R.A.*)

denominations to its fold without requiring them to surrender any of their distinctive doctrines. So strangely unpractical were some of the schemes then suggested. The danger, like other terrors, passed away, and left religion and the Church stronger rather than weaker for the crisis. The strength came in no small measure from the party which was springing up, chiefly in Oxford.

The Oxford Movement.

Of Oxford, in 1830, Mark Pattison writes,[1] "The true revolutionary spirit was already there, though it had not yet taken the precise direction which it afterwards did." He is speaking briefly of Oriel, and the tutors, J. H. Newman, R. I. Wilberforce, and R. H. Froude. "They were, however," he adds, "young men; Newman, the oldest of the three, was thirty, and little known. Neither my father nor his adviser could have any knowledge of the stimulating power which was latent in the Oriel tutors of 1830." The influence had already spread outside Oxford. John Keble had published, in 1827, "The Christian Year." William Palmer, a graduate of Dublin who had come to study in Oxford, published, in 1832, his "Origines Liturgicæ." In 1829 Isaac Williams went to the curacy of Windrush, a little parish on the borders of Gloucestershire and Oxfordshire. In 1832–33 Newman was travelling in Italy, and unconsciously preparing for the great work he was to do. Pusey was quietly studying and teaching at Christ Church. Poetry, the study of ancient sources, humble ministerial work, earnest aspiration and profound learning, all these were to be represented in the movement which was to form the parallel in the nineteenth century to the Wesleyan movement of the eighteenth.

Photo: Walker & Cockerell.

DR. THOMAS ARNOLD, BY WILLIAM BEHNES.
(*National Portrait Gallery.*)

H. D. TRAILL. Literature

THE decade which followed upon the Battle of Waterloo was crowded with splendid achievements in English poetry. Some, it is true, of the great singers who have made the age famous had fallen silent, or had sung their best. Coleridge's "Christabel," that germ of the new romance poetry, which had already done its fertilising work in manuscript, had still to

[1] "Memoirs," p. 28.

make its published appearance in the second year of the period, and to be succeeded on the part of its author by a long interval of silence, broken only in the poet's later years by utterances of for the most part far inferior power. The greatest efforts of Wordsworth's long poetic life had been made several years before. Scott closed the series of his romantic poems with "The Lord of the Isles" in 1815, having published the first of the immortal Waverley Novels in the previous year. But between 1815 and 1823 all the best works of Shelley and Byron and the entire and too slender body of Keats's poetry were given to the world. A decade which covers the publication of "The Revolt of Islam" (1817), the "Prometheus Unbound" (1819), the "Hellas" and the "Adonäis" (1821); of the Third (1816) and Fourth (1818) Cantos of "Childe Harold," the whole of the Byronic drama (1817–22), and "Don Juan" (1819–23); of the "Endymion" (1818), of the "Hyperion" (1819), and of those two incomparable odes, "To a Nightingale" and "On a Grecian Urn," is not to be matched in any period of our own or perhaps of the world's history.

Byron, 1788-1824.

But the three poets whose masterpieces appeared in such quick succession during these seven or eight years had little but their productive fertility in common, and—though two of them are among the glories of English literature, while the third shares with Scott the honour of having given that literature its widest European vogue and influence—differed as strikingly in gift as in circumstances and career. Byron, whose fame came to him in a day and deserted him within a few years of his death for more than a generation, ranks far below Keats and still further below Shelley in the order of purely poetic merit. There are even some who have denied him the title of poet altogether; and, indeed, at the height of the reaction which followed upon the Byronic enthusiasm of the early century, it is not improbable that a majority of otherwise competent English critics would have concurred in that denial. Nor from one point of view is this surprising. The defects both of the matter and manner of Byron's poetry are not only patent but obtrusive. His workmanship is often rough and careless to the point of slovenliness; his imagination, though powerful, and his passion, though intense, are both of strictly limited range; he has nothing of Shelley's tremulous sensibility to beauty

either in art or nature, nor any trace of Wordsworth's profound insight into the mystery of the external world. His command over the reader, where and when it is exercised, is a pure triumph of force and fire; his influence is akin to that of the

LORD BYRON, BY THOMAS PHILLIPS, R.A.
(*In the possession of Lady Chermside.*)

orator rather than of the poet. It sweeps tempestuously over the emotions like one of the "white squalls" of his beloved Mediterranean over its waters, agitating them vehemently enough on their surface, but never stirring them to their depths. And it is perhaps to his mastery of these simple emotional effects that he owes his attraction for the foreign reader, who is naturally less sensible to those subtler poetic beauties which are

in a great measure hidden from him under the unappreciated shades of meaning and the unfelt associations of a comparatively unfamiliar language.

Meanwhile, however, the progress of the years "which

Photo: Walker & Cockerell.

PERCY BYSSHE SHELLEY BY MISS AMELIA CURRAN.

(*National Portrait Gallery.*)

bring the philosophic mind"—or should bring it—to the critic as much as to the individual poet has to some extent rescued Byron from the neglect to which for well-nigh half a century he was consigned. In an age which has been rendered fastidious by familiarity with a hitherto unapproached excellence of artistic form in poetry, it is unlikely that he will ever regain his former popularity; but a generation of critics more catholic

in their tastes and less prejudiced in their judgment than their immediate predecessors have learnt the lesson of respect for the magnificent strength and sweep of versified rhetoric in "Childe Harold," for the fine dramatic quality of "Marino Faliero" and its companion tragedies, and, above all, for the brilliant assemblage of intellectual, if not always of strictly poetic, gifts, which is displayed on every page of "Don Juan."

Shelley, 1792-1822.

The fame of Shelley has not only been of slower growth, but has not even now attained, and probably never will attain, to the proportions which were reached by that of Byron during the second decade of the century. In the spiritual quality of his imagination there is none to compare with him in any age of our literature, and in mysterious magic of language we have to go to the greatest of the Elizabethans to find his peer. There are short passages and even single lines in Shelley which haunt the memory like Prospero's farewell to his wizardry, like Lorenzo's "moonlight speech" to Jessica, like Perdita's rhapsody on the flowers let fall by Proserpine. But his poetry, in its higher flights, is not only too ethereal for "human nature's daily food," it is unfitted for the spiritual sustenance of even the rarer types of human nature save in moments of exceptional exaltation. As for the ordinary mortal, he can no more "breathe in that fine air" than could Guinevere in the cold and saintly atmosphere with which Arthur surrounded himself. The rarefied, the almost de-humanized, character of Shelley's thought is nowhere more strikingly shown than in the alienating effect which it exercised even on so high and so idealistic an intelligence as that of Matthew Arnold, and which disabled that otherwise acute critic from doing him justice. Yet his famous comparison of Shelley to "a beautiful but ineffectual angel beating in the void his luminous wings in vain" needs only a slight modification in a couple of points to make the image as perfectly accurate as it is poetical and picturesque. "Ineffectual" and "in vain" are exaggerated expressions. They are only true of Shelley at those moments when he attempts more than human speech can compass, and it is going too far to say that this is constant or even frequent with him. But to that habitually hovering elevation of his poetry above the ordinary thoughts and passions and hopes of humanity, Arnold's angelic metaphor is admirably appropriate. If Shelley

does not beat his wings "in vain," he beats them "in the void." He is the poet of philosophers, dreamers, revolutionaries, of all who are furthest removed from the life of their fellow-men; and that is why, of all the world's great poets, it is he who has exercised the least influence on the poetry of the world.

Keats, 1795-1821.

Imperfect, on the other hand, as was the achievement of Keats, many and serious as were his disadvantages of worldly

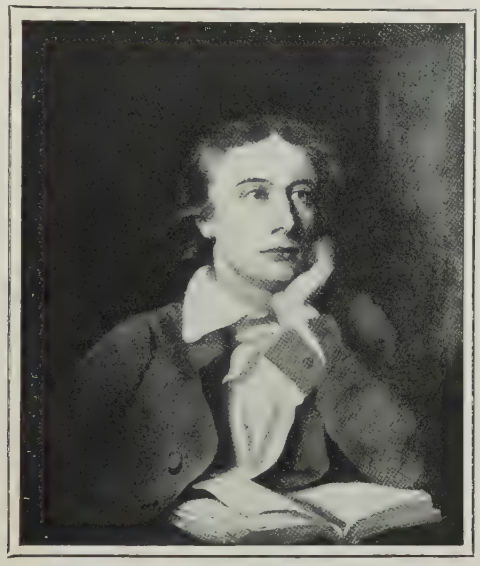


Photo: Walker & Cockerell.
JOHN KEATS, BY WILLIAM HILTON, R.A.
(*National Portrait Gallery.*)

position and surroundings, and premature as was the death by which the full development of his genius was cut short, it is to him whom we must look as the transmitter of the poetic tradition of our Augustan age to the present era. A fuller pulse of humanity beats in him than in Shelley, a more frankly sensuous delight in material beauty animates his verse; for Shelley's prevailing mysticism, in which only the finest and subtlest spirits can find any satisfying charm, he substitutes a glow of romantic ardour which must communicate itself in some measure at any rate to all but the dullest and most

hopelessly prosaic of human minds. We descend, in fact, from that supernal, but barely respirable, ether bathed in unearthly radiance, wherein Shelley habitually moves, to the revivifying atmosphere and exhilarating sunlight of the common day.

Minor Poets.

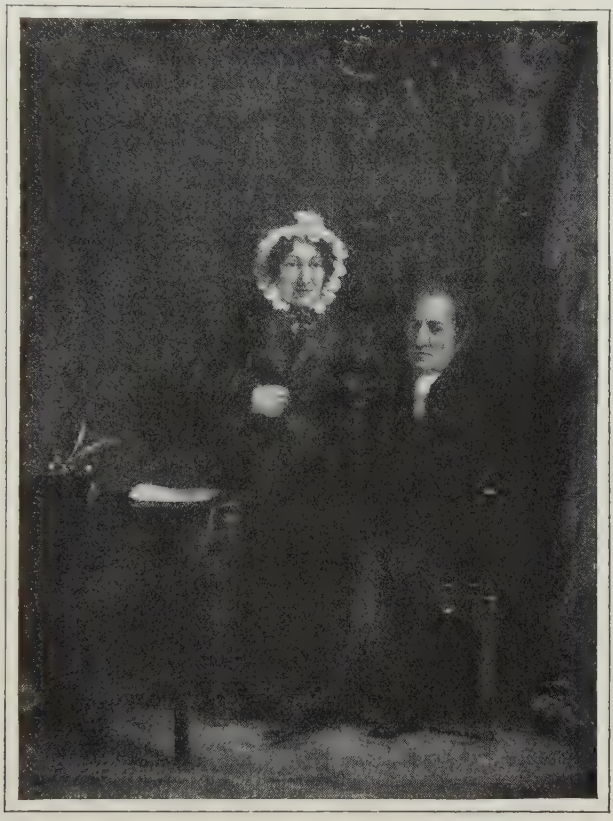
In our present era of too copious poetical and quasi-poetical production it is interesting to note by how few names, save those of actual immortals, this greatest since Elizabeth's days of all periods of English poetry was illustrated. Wordsworth, Coleridge, Scott, Byron, Shelley, Keats—it was by the magnitude, not the multitude, of such names as these that the age was rendered famous. As a list of immortals it would be a long one for even half a century, but as an enumeration of nearly all the writers who were worthy to be styled poets at all, it would be short even for twenty years. Yet outside this list it is difficult to find anyone fairly entitled to the honours of a poet, even of the second rank. The doubtful exceptions of Moore and Campbell have been noticed in a previous volume, and the no less questionable claims of Landor might be admitted to a place beside theirs; but to Rogers it is quite impossible to concede more than the merit of an agreeable versifier, and though "sonneteering Bowles" had enough of "the root of the matter" in him to inspire Coleridge, he cannot be said to deserve more than the credit of good intentions unequally matched with his powers of execution.

Essayists.

The prose, however, of the period covered by this chapter is in a different case; for if among its masters there are perhaps but three—De Quincey, Lamb, and Landor—who can be regarded as of the first rank in point of style, the catalogue of distinguished essayists and critics is for the next twenty to twenty-five years an imposingly long one. Between 1815 and 1840 not only had two of the three writers above mentioned done all their best work, and the third completed his enduring contribution to English literature and passed away, but men so eminent in their various departments as Hazlitt, Wilson, Lockhart, Sydney Smith, Hallam, Cobbett, Leigh Hunt, were in full literary activity, and even within the first ten years of the period an essayist destined to become more famous than any of them had made his *début* in the periodical press in the person of Macaulay.

If we put the name of De Quincey (1785–1859) first, it is

certainly not because of any transcendent perfection in the style of one who is in truth an extremely unequal writer. Were the place to be awarded on that principle to any essayist of the period, it would assuredly fall to Charles Lamb (1775–1834), **De Quincey.** **Lamb.**



CHARLES AND MARY LAMB, BY FRANCIS STEPHEN CAREY.
(National Portrait Gallery.)

who, indeed, is perhaps the most remarkable example in all literature of a writer whose mere manner of saying the thing—apart altogether from the wisdom, wit, humour, pathos, tenderness, urbanity of the thing said, though in all of these qualities he is conspicuous—is an unfailing source of delight. Something of the same sort, though with an application to a far more limited **Landor.**

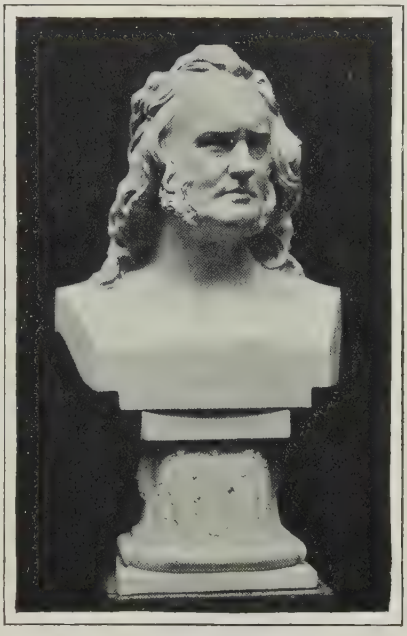
list of qualities, may be said of Walter Savage Landor (1775–1864), whose noble monumental style, far more truly and successfully Greek than his attempted Hellenisings in verse, has reconciled many a reader to as perversely ill-assorted a set of political and literary opinions as was ever begotten of the union of Tory prejudices and Jacobin theories in the same person, and to as arrogantly defiant a dogmatism as overweening pride of

Photo: Walker & Cockerell.

THOMAS DE QUINCEY, BY SIR J. WATSON GORDON, R.A.
(*National Portrait Gallery.*)

intellect ever brought to their support. But the interest of De Quincey is that of an experimenter and pioneer in English prose. He may, in fact, be described as the inventor of that variety of prose—a questionable variety in the hands of many of his successors—which has been named the "poetic": a form in which, to attain the ends of vivid description or of impassioned narrative, the restraints which the elder prose-masters deliberately imposed upon themselves in respect both of construction and vocabulary were as deliberately thrown off. In other words, the attempt was for the first time made to arouse

emotions as vehement in the mind of a reader through the medium of prose as are or may be excited by the instrumentality of verse. In some of De Quincey's most famous passages this exaltation of the *emotional* power of prose is overwhelmingly felt. "The Vision of Sudden Death," for instance, excites like a thrilling scene of drama; and the "Dream Fugue" that follows it impresses like a majestic poem. The highly coloured diction and the impassioned rhythms by which these dramatic and poetic effects are produced are not employed with invariable taste and discretion, and when they fail in their more ambitious attempts the result is distressing. But, unequal as he is, De Quincey fails very rarely in this respect, and his successes did undoubtedly reveal new capacities in English prose, which contemporaries like John Wilson (1785–1854), and successors like John Ruskin, were destined still further to develop.



JOHN WILSON (CHRISTOPHER NORTH), BY JAMES FILLANS.
(*Scottish National Portrait Gallery.*)

The mention of John Wilson recalls a circumstance which, in the pages of a history concerned primarily rather with movements than with men, is especially worthy of note—the growing importance, that is to say, of the connection between literature and the periodical press of the day. The famous prose-writer whom we have just dealt with gave all his best known pieces to the world through the medium of "the magazines." "The Confessions of an Opium-eater," for instance, appeared in the *London*, which miscellany had also the undying honour of ushering the

Literature and the Magazines.

"Essays of Elia" into the world; and in later years De Quincey wrote much for *Hogg's Instructor* and *Tait's Magazine.* Another case is that of William Hazlitt (1778–1830), a fine, though unequal essayist, and the most accomplished dramatic critic that England has produced. The entire period, in short, is remarkable for the rapid and successful development of that organisation of criticism the beginnings of which were noticed in the closing chapter of the last volume (V., p. 802). To the *Edinburgh Review,* in which Jeffrey (V., p. 804) had among his principal colleagues the brilliantly witty Sydney Smith (1771–1845) and the versatile Brougham (1778–1868), whose omniscience did not exclude real knowledge of some of the subjects which he handled; and to the *Quarterly,* which under Gifford's editorship, and with such men as Southey and Scott among its contributors, had rapidly risen into rivalry with the older periodical, was, in 1817, added *Blackwood's Magazine,* an organ of more pronounced Conservatism, both in politics and literature, than the *Quarterly.* This periodical was for many years distinguished by the writings of John Wilson, under the pseudonym of "Christopher North," a poet of little mark, but an essayist and *causeur* of commanding and singularly varied powers, whose "Noctes Ambrosianæ," though always somewhat of a stumbling-block to the Southron reader, still preserves for those who have attained the proper "point of view" the original charm of its gaiety, wit, and dramatic humour, its innumerable episodes of brilliant, if sometimes perverse, criticism, and its occasional passages of admirably eloquent prose. It is perhaps, indeed, as a prose-writer of the new "poetic" school founded by De Quincey that Wilson would first claim consideration, were it not that his influence upon English literature in this capacity was far more limited than that of the author of "The Confessions of an Opium-eater." Another writer of distinction, who was a contributor to *Blackwood* in its early days, was John Gibson Lockhart (1794–1854), afterwards editor of the *Quarterly,* a critic of sound judgment and scholarly equipment, though given to a severity of expression that sometimes bordered on the brutal, but whose enduring fame reposes on his admirable Life—by general consent one of the two or three greatest biographies in the language—of his illustrious father-in-law, Sir Walter Scott.

Christopher North.

Lockhart.

Of a yet earlier date than the birth of the Tory *Blackwood*, or, indeed, than its quarterly predecessor of the same politics, was the Radical *Examiner*, a weekly journal started and for fourteen years conducted by the brothers Hunt. The former of these, Leigh Hunt (1784–1859), has secured himself a place in the history of the period, if not by the bulk of his prose-writings—which, indeed, are often undistinguished enough—yet by occasional pieces of genuine merit both for thought and style, and by a finely

Leigh Hunt.

Photo: Walker & Cockerell.

LEIGH HUNT, BY BENJAMIN ROBERT HAYDON.
(*National Portrait Gallery.*)

sympathetic appreciation of all that is best in literature. And the list of periodicals may, perhaps, fitly close with one which was associated throughout its history with the name of a writer of far greater power and of widely different temperament—to wit, the *Weekly Register*, a journal in which William Cobbett (1762–1835: p. 120) for years displayed, amid many extravagances of prejudice and crudities of utterance, a command of racy, homely, and vigorous English which made him the most popular, if not the most powerful, political writer of his time. The immensely important part played by periodicals in the advancement of letters during these years may, perhaps, be most conveniently measured by viewing it from the point of view

Cobbett.

adopted in his history of "Nineteenth Century Literature" by Professor Saintsbury, who, after enumerating Cobbett, Jeffrey, Sydney Smith, John Wilson, Charles Lamb, Leigh Hunt, Hazlitt, De Quincey, Lockhart, and some others, remarks, with perfect truth, that all of them were, "if not exactly journalists, at any rate such frequent contributors to periodical literature of one kind or another that in some cases nothing, in most comparatively little, would be left of their work if contributions to newspapers, reviews, and magazines were to be excluded from it."

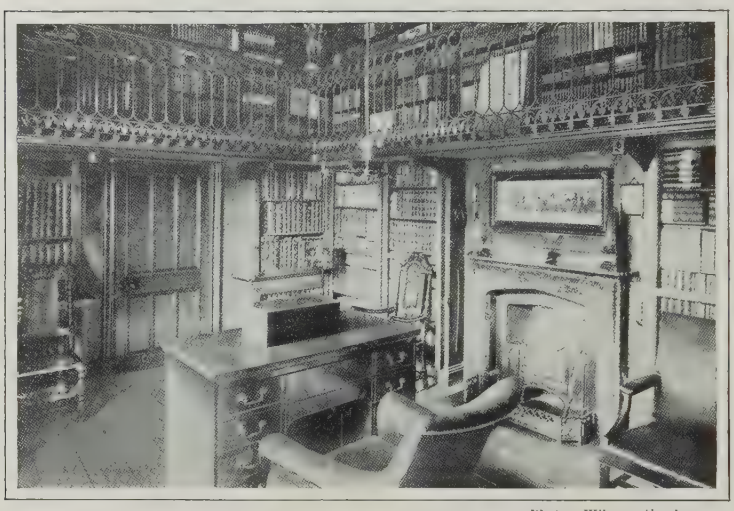


Photo: Wilson, Aberdeen.

SIR WALTER SCOTT'S STUDY, ABBOTSFORD.

Scott.

Rich, however, as was the contribution of critics and essayists to the prose literature of this period, it was surpassed in splendour and far outdone in historic importance and progenitive potency by the achievements of its one great novelist. The seventeen years over which this chapter extends have been rendered ever memorable, not only by the production in the Waverley Novels of by far the most splendid series of imaginative prose works to which any single mind has ever given birth, but also, and therewith, by the addition of what may fairly be called an entirely new form to those three or four very ancient moulds into which man has poured the fused metal of the imagination since literature began. For Scott was

the creator of the historic romance—a form which differed from the epic in prose or poetry in that it did not confine itself to the deeds of historical or historico-mythical personages; from the *contes* and *fabliaux* that succeeded the epic, and went to

SIR WALTER SCOTT, BY SIR HENRY RAEBURN, R.A.
(*By permission of T. D. Galpin, Esq.*)

the other extreme of being purely fanciful in character and incident; from the novel of the previous century, which in the hands of Fielding, Smollett, Richardson, had been a pure transcript of contemporary manners; and lastly, of course, from the drama, in the medium of its presentation. It is to this last, however, in the shape which it took in Shakespeare's Histories, that it bears a closer resemblance than to any other. Real and

imaginary personages and events are intermingled in each. Dugald Dalgetty takes part in the actual warfare of Royalist and Parliamentarian, as Falstaff fought, and narrowly escaped death, at Shrewsbury fight. Oliver Proudfute is made to move among historic Scotch barons, just as Ancient Pistol is placed side by side with Harry the King, Bedford and Exeter, Salisbury and Talbot, Warwick and Gloucester, on the field of Agincourt. And it is this, indeed, which has caused Scott to succeed or supplement Shakespeare as the source of all the English history that is known to a large number of the English people, a circumstance which should give the professional historian reason to rejoice that Scott had more reverence for historic truth than his great admirer and the most successful of all the writers inspired by his example, Alexandre Dumas. That splendidly fertile romancer is, however, only one among an innumerable band of followers on a path of literature which was eagerly pursued for some years after Scott's death, and, after a certain slackening of the stream in the third quarter of the present century, has since then been thronged by a band of spirited, and in some cases brilliantly accomplished, writers of the new school of adventurous romance.

The Waverley Novels.

It is impossible within the limits of a work of this description to do more than attempt to fix Scott's place in relation to the development of our prose literature. Detailed criticism of the extraordinary series of romances which began in 1814 with "Waverley," and ended with "Castle Dangerous" the year before his death, would in this place be impossible. Reckoning the three short stories in the first series of the "Chronicles of the Canongate" as one work, they number twenty-seven in all, a figure not much below that of the Shakesperian canon; and if it be true that even the greatest of them fail to attain the Shakesperian level, it might on the other hand be said of all but two or three of them, produced under extremely adverse circumstances, that no succession of imaginative creations maintaining a more consistent and uniform standard of artistic mastery has ever, even by Shakespeare himself, been presented to the world. The gallery of the immortal romancer is hardly less crowded with ever-living figures—heroic, humorous, beautiful, pathetic, terrible—than is the gallery of the immortal dramatist.

Two female novelists—one of considerable, the other of

surpassing merit—may for various reasons be appropriately noticed in immediate succession to Scott. It was to the Irish novels of Maria Edgeworth (1767–1849) that Scott declared himself to be indebted not only for the suggestion, but for the model of his own Scotch romances. The suggestion may, indeed, have been so supplied, but those who have made acquaintance with "Castle Rackrent" and other works of Miss Edgeworth will hardly be disposed to assign to these sketches of Irish life and character, vivid, spirited, and amusing as they are, the place which Scott in his generosity claimed for them.

MARIA EDGEWORTH.
(*From an old engraving.*)

A writer of far greater power, though even she, perhaps, has been too highly extolled by the same enthusiastic eulogist, was Jane Austen (1775–1817), who in strictness of chronology should perhaps have been dealt with in the last chapter of the previous volume, but whose works, long retained in MS., were not published till just upon the close of the period which that chapter covers. The unmeasured praises bestowed upon this extraordinary woman by Macaulay are well known, and not less so is Scott's declaration that, though he could "do the big bow-wow strain like any now going, the exquisite touch which renders commonplace things and characters interesting from the truth of the descriptions and the sentiment" was "denied" to him. Herein he was certainly unjust to a hand which showed itself when the occasion required it as consummate a master of miniature as of fresco; but the self-depreciation aside, Scott did no more than justice to the marvellously

finished portraits of the men and women of her contracted circle which the author of "Pride and Prejudice" has left behind her—portraits so closely resembling, yet so deftly discriminated from, each other, and all alike "bitten in" upon the etching-plate with an acid of the subtlest and most delicately flavoured irony that is to be met with in all literature. The contemporary novel of analysis is as direct a descendant from Miss Austen as is the contemporary romance of adventure from Sir Walter Scott.

REGINALD HUGHES. Painting.

THE years that followed the fall of Napoleon found English art in a somewhat unfortunate position. Portrait-painting was really decaying, though Lawrence (V., p. 592) was in his zenith, and Raeburn (V., p. 591), at times, reflected the grandeur of the masters of the previous century. Wilkie had set the fashion in genre, and to good purpose, while Mulready, Leslie, Collins, and many smaller men, were his rivals or imitators. The historical school was in its normal state of ineffectiveness, being represented by the veteran Benjamin West, by his countryman and feeble imitator Allston, by the still feebler Howard, by Hilton, and by Haydon. Perhaps the ablest of the band was William Hilton, R.A., the son of a little known Lincoln artist, who devoted himself almost exclusively to religious compositions, and many church pictures are by his hand. A certain Italian feeling for grandeur is to be noticed in some of his works, but the inspiration flowed in an attenuated stream. He died in 1839, in his fifty-fourth year.

William Hilton.

Benjamin Robert Haydon.

Benjamin Robert Haydon, born in 1786, was a stronger individuality; and if energy and self-confidence could have supplied the place of genius and industry, a high place in the history of art would have been his. He was a West-countryman, the son of a Plymouth bookseller, and in 1805, at the age of nineteen, was admitted a student at the Academy. Sacred and classical art was his dream. His first picture, commenced in his twenty-first year, was a six-foot canvas, "Joseph and Mary entering on the road to Egypt." His best pictures are not very well known, and are usually genre subjects, like "Reading the Scriptures," or portraits such as "The Times." He was a fair draughtsman, and a coarse but

effective colourist, but his texture is usually very unattractive, and an innate vulgarity mars his efforts at expression. After a stormy life, during which he was more than once in the debtors' prison, he committed suicide in 1846.

It has been said of English painting of this time, that it is often full of talent, and still more frequently of originality,

Photo: Walker & Cockerell.
JOSEPH MALLORD WILLIAM TURNER, R.A., BY CHARLES TURNER.
(*National Portrait Gallery.*)

but is essentially deficient in genius. But one great exception must be made. For landscape the period was a golden time.

J. M. W. Turner.

We have already said a few words of Turner the water-colour painter (Vol. V., p. 783). It is necessary to say something of the painter in oils, and this notwithstanding that he has had the supreme good fortune to have Ruskin for his *vates sacer*. Up to the year 1819 Turner, who had set himself the task of painting light and heaven and earth, water and

cloud and atmosphere, in the true colours that the sunshine gives them, was content to follow the methods and to limit himself to the aims of the "former men." First it is Wilson, then it is the Dutchmen, Cuyp and Bol and Vandevelde; then it is Poussin, and finally Claude Lorraine. Such imitations were easy to him; imitation was part of Turner's course of study. The full strength of light, unsifted and unstrained, is not to be found in Turner's models, nor at first in Turner. During the whole of his first period he uses, by preference, a low key of colour, to which all nature is subdued, and employs, also obviously by preference, a somewhat heavy touch. His figures are usually poor, but that of the "Apollo killing the Python" shows that, had he chosen, in this also he could have excelled. In the second period, to quote Ruskin—

> "He worked on the principles which during his studentship he had discovered, imitating no one, but endeavouring to do what the then accepted theories of art required of all artists—namely, to produce beautiful compositions or ideals, instead of transcripts of natural fact."

To this period, which is usually considered as represented by the seventeen years between 1819 and 1836, belong his most perfect works—"Childe Harold's Pilgrimage," "The Bay of Baiæ," and that crowning glory of English art, "Ulysses deriding Polyphemus." This is the central and quintessential work of the great painter. In his third period—which, to our view, shows the painter of the second period working without any prevention or restraint—we see him setting down his impressions of Nature just as they came to him: sometimes with violence, sometimes with the most dazzling success: occasionally turning back to the ideals of his earlier time, occasionally spending all his force in accuracy of delineation. The "Apollo and Daphne," "The *Fighting Téméraire* tugged to her last berth," "The Sun of Venice," and "The Burial of Wilkie," are among the *chefs-d'œuvre* of this later time.

It is difficult, even impossible, to sum up in a single chapter, much less in a single paragraph, the contribution of this great genius to the world of art, and so far as it is possible it has been done by Ruskin. It was not only that nobody before Turner had painted mountains in the spirit of the mountains, or seas, still or stormy, in the spirit of the sea, or that he first interpreted for us the redundance of Nature, the infinity of

THE BAY OF BAIÆ; APOLLO AND THE SIBYL, BY J. M. W. TURNER, R.A.
(*National Gallery.*)

cloud perspective, the alluring mystery of distance—he did all this, but he did much more. He was the supreme master of all the splendour, all the magic of the heavens. And all this was done, or mainly done, in that period of intellectual stagnation and formality, the age of the Regency and the reign of George IV. and his successor. And he who brought this revelation to man—for it was nothing short of a revelation—was the son of a poor hairdresser in Maiden Lane, without refinement, without schooling, coarse in his tastes, ungainly in his person, uncouth in his speech; the greatest natural talent, the most lonely and isolated individuality, that the century has produced. After a life of unequalled productiveness in oils, in water-colours, in drawings for the engravers, wealthy beyond his wants and famous beyond his desires, he died in 1851 at the age of seventy-six. It was one of the fancies of this strange great, lonely nature to hide himself on his holidays in some hole or other, and, for his complete security, to go by a feigned name. He was passing under the name of Brooks, as a broken-down sea-captain, and lodging at a riverside cottage at Battersea, when he was seized with his last illness. There was a railed-in roof to the cottage, and as long as he was able the painter, whose life had been given to learn the mystery of light and its interpretation, used regularly to drag himself up to gaze at the sunrise. "The sun, it is God," were almost the last words that escaped his lips. Truly a pious man this, according to his creed.

Not only did Turner live his artistic life apart, but the glorious creations of his maturity bear the distinctive marks of an essentially lonely and incommunicable genius. In consequence, his influence on English art, as a whole, has been singularly small, and, indeed, in an inverse ratio to the transcendent greatness of the artist. Quite otherwise has it been with Constable. His, too, was a thoroughly original talent; but he was a great emancipator as well as a great artist, and largely influenced the landscape art not only of his native country, but of France. The amount of the debt may be disputed, but hardly the fact of indebtedness. Other landscape-painters, like Gainsborough, had painted Nature to please themselves, but fate and Constable alone proved strong enough to force recognition from an unappreciative public.

This remarkable man, John Constable, came from Suffolk, and the countryside which he has immortalised was only a dozen miles or so to the south of Gainsborough's. He was born in 1776 at East Bergholt, a village on the Stour, the river whose finely timbered banks so often furnished him with subjects. His father, Golding Constable, who came of a Yorkshire stock, was a wealthy miller. He inherited Flatford and its water-wheel, and acquired by purchase Dedham, which his son's brush was to immortalise. After a rather desultory **Constable.**

LANDSCAPE, WITH JAQUES AND THE WOUNDED STAG,
BY SIR GEORGE H. BEAUMONT.
(*National Gallery.*)

schooling, intended to fit him for orders, and about a year's practical work at the milling business, John was allowed to commence an artistic career. This was due, to some extent, to the good nature of Sir George Beaumont, whose mother resided at Dedham, and kindly introduced the miller's artistic son. He praised some of his drawings, lent him some Girtins to study, and allowed him to copy a favourite Claude. And he did more: he persuaded the elder Constable to allow him to go to London, with introductions from the baronet. It is curious that Sir George Beaumont, whose repute as a critic was then at its height, and who was the most hidebound advocate of the "brown tree" order of landscape, should thus

have been instrumental in forwarding the career of the great naturalist painter, whose sturdy strokes felled "the brown tree" to the earth. But beyond assisting Constable to get to London and introducing him to certain Academicians of small parts, such as Farington, Sir George Beaumont's influence on Constable was, fortunately, *nil*.

It was John Dunthorne, a plumber and glazier, an enthusiast for Nature, and a firm believer in the possibility of painting its broad effects, who was the predominant influence in Constable's early life. From him he received his first lesson in the observation of Nature and acquired the habit of painting in the open air. With the little equipment that Dunthorne could provide, and Sir George Beaumont's introduction, he arrived in London, but his studies had advanced so little by 1797 that, on the retirement of his father's old clerk in that year, he returned to East Bergholt to manage the mills, and this he did without a murmur, although fully believing that it meant the abandonment of his artistic career. In 1799, however, he was back in London, whence he wrote to Dunthorne announcing his admission as a Royal Academy student. Three years later he attracted the attention of West, whose forgotten landscapes were probably his best works, and from whom he received excellent advice and kind encouragement. "Your darks should look like darks of silver" was a precept of his, laid to heart by the young painter. It was in May, 1802, shortly after the exhibition of his first landscape at the Academy, that he wrote to the faithful Dunthorne a letter which is of singular interest, as it is at once an apologia and a dedication of his life. "For the last two years," he says, "I have been running after pictures, and seeking the truth at second hand. I have not endeavoured to represent Nature with the same elevation of mind with which I set out, but have rather tried to make my performances like the work of other men. I shall return to Bergholt, where I shall endeavour to get a pure and unaffected manner of representing the scenes that may employ me. There is little or nothing in the exhibition worth looking up to. There is room for a natural painter."

To this goal he pressed forward from that time to his death, with ever-increasing confidence, and a year later he wrote, "I feel now more than ever a decided conviction that I shall,

THE VALLEY FARM, BY JOHN CONSTABLE, R.A.
(*National Gallery.*)

some time or other, make some good pictures, pictures that shall be valuable to posterity if I do not reap the benefit of them." So exact a forecast is unique in the history of art, but the way was long, and appreciation came slowly. His friends bought his pictures, and a few brother artists; but for the first ten years of his career he did not sell a single landscape to a stranger. He was not elected an Associate till 1819, or a full Academician till 1829, eight years before his death. He was, unfortunately for his own happiness, morbidly sensitive to the want of appreciation. In his later years, long after he had gained a gold medal in the Paris Exhibition, after he had been received into the full brotherhood of the Academy, and when he felt himself a personage, he said bitterly, "The painter himself is totally unpopular, and will be on this side the grave."

Nevertheless Constable never faltered in the work he had set out to do. He passionately loved the flat country of his youth, the shallow rivers, the rich meadow grass by the lock side, the masses of green elms, the wet leaves tipped with silver under the broad sunlight, the harmonies of grey cloud and drifting showers, the surprises of sunbeams piercing a menacing sky, all the greenness of the dripping woodland, all the freshness of the summer rain. These things, every one of them, he stated simply, lovingly, with all the strength that was in him, and with the most absolute belief in their sufficiency. He has been accused of sameness in his treatment; but it was part of his settled plan to keep on, to use his own phrase, "hammering at the nail." Nature on the banks of the Stour had, he said, taught him to be a painter, and he repaid the debt by immortalising his teacher. "The White Horse," "The Lock," "The Mill" (at Stratford and at Flatford), "Dedham Vale," "The Haywain," "Noon," "The Jumping Horse," "The Valley Farm," are his tribute. Nor, in all the noble series of his works, is he ever more entirely himself than in these home examples. It is interesting to note, however, that his "Salisbury Cathedral from the Meadows" was the picture which he thought conveyed the fullest impression of the compass of his work.

Constable's Influence.

Constable was, besides, the most useful of pioneers, for he taught the landscape-painter to go to Nature for his subjects;

"to leave the galleries for a while and look at the creation," and paint such message as it had for him. Thus it has happened that, on both sides of the Channel, he has had, as he would have wished, followers of his principles by the score, but hardly any imitators of his practice. Just as Constable was the first to paint the silver sparkle of the light on the edges of the drenched elm-leaves, so Corot was the first to give the smoky softness of the twittering foliage of the French poplar. When Constable's landscapes received a medal in the Salon, a French critic complained that the influence of these English pictures would ruin French artistic traditions. The answer is the work of that admirable group of artists, among whom were Corot and Millet, Rousseau and Troyon, the school that has immortalised the little forest village of Barbizon.

Nor were Constable's dispraisers found only or chiefly among the foreign critics. At home they laughed at his silvery lights—"Constable's snow" they called it derisively. They jeered, too, at his love of grey and showery weather. "Give me mine ombrella," said Fuseli, "I am going to see a picture of Mr. Gonstable's." Even Ruskin wrote that—

"Constable perceives in a landscape that the grass is wet, and the meadows flat, and the boughs shady; that is to say, about as much as I suppose might in general be apprehended between them by an intelligent fawn and a sky-lark."

This diatribe contains perhaps the noblest compliment ever paid to a landscape-painter. It goes, moreover, to the root of the matter, for that was exactly what Constable felt, and those unnoticed beauties it was his hope and wish to bring to light. "I love every stile and stump and lane in the village," he said; "as long as I am able to hold a brush I shall never cease to paint them." Hardly recognised, as we have said, as a great artist until the Exhibition in Paris in 1824, Constable died in 1837 at the age of sixty; but the maker of modern landscape had done his work.

John Linnell.

Other landscape-painters of the period, whose names cannot be omitted even from this most jejune sketch of early nineteenth century art, were John Linnell and Francis Danby. The attitude of both towards their subject was infinitely less devout, if we may use the phrase, than that of Constable; yet Linnell did to some extent for Surrey what Constable did for Suffolk.

He was born in 1792 in London, and while very young entered the studio of John Varley, the water-colour painter, and had Mulready for a fellow-student. Before he was thirteen he was admitted to the Royal Academy School, where he was a great prize-winner. Three years later his landscape, "Removing Timber in Autumn," obtained a prize of £50 from the British Institution. He was an ardent worker, drawing much from the antique, and, as has been admirably said, "the stringent influence on his mind of the Elgin marbles largely helped to preserve for him an ideal and poetical attitude towards Nature." Notwithstanding his early success he found a very scanty sale for his landscapes, and his house was crowded (as Gainsborough's had been) with canvases that nobody seemed to want. He was thus driven to eke out a living by painting portraits, and Thomas Carlyle, before he was a famous writer, sat to Linnell before he was a famous painter. Curiously enough, his portraits are markedly wanting in idealisation, being tight in execution, literal and prosaic. On the other hand, his landscapes, even the most defective of them—and occasionally he failed totally both in texture and tone—are remarkable for their strongly emotional character. He was born a Baptist, and subsequently became a Plymouth Brother; but he was at all times an ardent theologian, and some of his best pictures, such as "The Eve of the Deluge," with the superb menace of its crimson and orange sky, are in the nature of Biblical illustrations. Though early gaining distinction as a student, he was never a member of the Royal Academy. His name was on the list of aspirants for many years, but he was passed over so frequently that, in disgust, he withdrew his candidature. Many years later, when material success had long been assured, he was invited to allow himself to be proposed again for the Associateship, but he declared himself too old for that probationary honour, and as the rules did not permit a direct election to full membership, he remained outside.

Francis Danby.

A more eccentric personality was that of Francis Danby. He was an Irishman, the son of a small Wexford farmer, whom the Rebellion of 1798 drove into Dublin. In 1820 he made a mark by his highly dramatic (almost melodramatic) "Upas-tree." It is a vivid rendering of the fable that the poison of this terrible tree was obtained by criminals sentenced to death, who

LANDSCAPE, WITH FIGURES, BY JOHN LINNELL.

In the possession of W. Y. Baker, Esq., Streatham Hill.

risked their forfeited lives to obtain it, and the setting is a dark and precipitous gorge, the bottom encumbered with skeletons, dead men and beasts and birds, all seen under a broken moonlight. This was followed by "Disappointed Love"—a girl meditating suicide, in appropriate surroundings. The pictures by which Danby is, however, best remembered are sunset effects. No man has been more successful in painting the fiery orb of the sun low on the horizon, when the violet rays are cut off by the depth of the moist atmosphere. It was one of these studies that opened the way of fortune to the painter. His "Sunset at Sea after a Storm," with its red, lurid light on the broken waves, where a helpless raft lies tossing, was purchased by Lawrence, and the next year Danby was elected an Associate of the Royal Academy. But a domestic scandal, in which the culpability of the painter is admitted, wrecked his career. He was forced to quit the country, and for twelve years after 1829 he resided in Switzerland. He then returned, but the Academy never forgave his early indiscretion, and he remained a sort of pariah till his death. In this latter time he painted some excellent pictures, one in particular, "The Grave of the Excommunicated," a superb rendering of moonlight, with the deep colour in the interspace of open sky, and the hint of saffron on the racing clouds. At times, too, particularly in dealing with a subject like the "Passage of the Red Sea," where the pillar of fire fairly puts out the sunset, he shows a feeling for the terrible which is rare amongst English artists. He did not die until 1853, but the best of his work was done in the twenties and forties of the present century.

John Martin.

To this class of painters, if to any, we suppose that John Martin belongs. Like Bewick and Good and many others, he was a North-countryman. He was born in 1789, and learnt the rudiments of art from an Italian named Musso, who practised at Newcastle as an enamellist and painter of miniatures, with whom he came to London. He, however, soon left his master, prosecuting his studies in absolute solitude, and giving great attention to architectural drawing. He began to exhibit at the Academy as early as 1811. Ten years later he painted the "Belshazzar's Feast," a grandiose perspective of impossible architecture. Thenceforward he painted a series of similar subjects, such as "The Deluge," "The Last Judgment," "Nineveh,"

THE PASSAGE OF THE RED SEA, BY FRANCIS DANBY, R.A.
(*In the possession of His Grace the Duke of Sutherland.*)

etc. There is something very imposing in many of his pictures, although the action and expression of his figures is ill chosen and "bombastic." But his brush-work is inferior, his methods mechanical, and his colouring, as a rule, painfully inharmonious. The best that can be said of this artist, who enjoyed a great reputation in his day, was said by Wilkie, who declared that "although weak in all those points in which he can be compared with other artists, he is eminently strong in what no other artist has attempted." He is best seen in his engravings, particularly where the scale is small; such, for instance, as the illustrations for Milton, where the faulty drawing is less apparent, and there is no colour to be objectionable. It has been suggested that Martin was always slightly mad, and there is much in his work to justify the notion.

Samuel Prout.

While Martin, as we have seen, was devoting his best efforts to painting imaginary architecture, the artistic possibilities of the reality were being illustrated by the admirable water-colours of Samuel Prout, and a little later by the work of David Roberts. Prout was a Plymouth lad, and the schoolfellow and companion of Haydon. His first employment was in making drawings for "Picturesque Beauties of England," which was published by one Button. He first exhibited at the Academy in 1804, being then only twenty. At first he seems to have desired to be a marine painter; but his true vocation was towards architecture, and in the years from 1815 to his death, in 1852, he poured forth an innumerable series of studies of Gothic porches and towers, and Venetian and Genoese palaces, of Norman and Breton markets. His work is frequently inaccurate in detail, but he never fails to make a picture.

David Roberts.

In the same sequence we must mention David Roberts, the Scotchman, born in 1796, who towers above all the architectural artists of his time. He was the son of a shoemaker, and was bred a house-painter. Thence he advanced to the theatre, where he probably first learnt the knack of painting buildings. It is probable, too, that he acquired in the same rough school his extraordinary skill in selecting the main lines which must be inserted, and in indicating the rest by the most shadowy suggestion. He joined the Society of British Artists in 1824, and two years later sent his first picture to the Academy, which gave him a kind reception. Meanwhile in the pursuit of

subjects he went even further afield, and from Dryburgh and Melrose we find him going on to Rouen and the Normandy towns, the Low Countries, Spain, and even Morocco. Some of his most famous works, like "The Gateway of the Great Temple,

GATEWAY OF THE GREAT TEMPLE, BAALBEC, BY DAVID ROBERTS, R.A.
(Walker Art Gallery, Liverpool.)

Baalbec," and "The Ruins at Philæ," were the result of journeys in Syria and Egypt. Genre.

Of the Scotsman Wilkie we have already spoken (Vol. V. p. 762) as the true founder of genre painting in England, and his work, until he was bitten by the gadfly of the historical school, is the best of its kind. His greatest rival, though his fame has been long on the wane, was the Irishman William

Mulready. Mulready. He was born in county Clare in 1786, the son of a breeches-maker, but the family passed over to London, where the boy attracted the attention of various artists, notably of Banks the sculptor. At fourteen he got his student's ticket for admission to the Academy, and five years later married the sister of John Varley, the water-colourist. His "Fairtime," with the two tipsy countrymen, now in the National Gallery, "The Fight Interrupted," with the beaten school bully, "The Wolf and the Lamb," "Giving a Bite," and "Choosing the Wedding Gown," sufficiently gauge and sample his talent. He was indefatigable in drawing from the life, and many of his studies are masterly in the highest sense. He was also an ingenious designer, as indeed is visible in the famous "Mulready envelope," executed for the Post Office in 1840 (p. 331).

Charles Robert Leslie. Just the opposite may be said of his friend Leslie, who without much feeling for colour, and not a great draughtsman nor a brilliant master of the brush, is still one of the most popular of English artists. This is obviously due to the fact that his works without exception show a feeling for beauty of the most healthy, if not the highest, kind, and an appreciation of humour which is at once entirely sympathetic, yet entirely refined. Indeed, the vulgar element in a subject frequently disappears (not without some loss of dramatic force) in passing through that happy temperament of his; look, for instance, at "Uncle Toby and the Widow Wadman in the Sentry Box," now in the National Gallery. The pure gold of Uncle Toby needs no refining, but the widow—how immensely more refined is Leslie's pencil than Sterne's pen! Charles Robert Leslie, though born in London, was bred in Philadelphia. His parents were poor, and he was apprenticed to a bookseller; but a chance sketch which the boy made of Cooke the tragedian (who was starring in the Quaker city in the character of Richard III.) induced his generous master to get up a subscription to start him as an artist. He was just seventeen when he sailed. The Americans, West and Allston, opened their studios to him; and at the Academy he studied, or idled, under the so-called instruction of Fuseli. His first efforts were in emulation of his countrymen, whose historical pictures were the fashion; but his first great success was with "Sir Roger de Coverley at Church," a subject in exact accord with

his own gentle and humorous spirit. From this time forth a succession of genre pictures, from "Don Quixote," from the comedies of Shakespeare, and from the English, and occasionally the French, humourists occupied his time. He went back to America for a year, but returning in 1834, lived the rest of his life in England. Nor is there any painter of them all whose work, both in its merits and defects, is more thoroughly English

THE PRINCIPAL CHARACTERS OF THE "MERRY WIVES OF WINDSOR," BY C. R. LESLIE, R.A. (*Victoria and Albert Museum.*)

in feeling. He attained full Academical honours in 1826, and after a life of distinguished success he died in 1857, universally beloved.

Gilbert Newton.

With a more delicate sense of colour, but an inferior executant, Gilbert Stuart Newton falls naturally into the place after Leslie. Like Leslie, he came from the other side of the Atlantic, having been born in Halifax in 1795. He came of an artistic stock; his father had practised as a portrait-painter in America. He was a good deal influenced in his choice of subjects by Washington Irving. Many of them are Spanish, such as "Camilla introduced to Gil Blas at the Inn"; but he was cosmopolitan in his tastes, and his "Portia and Bassanio" at Kensington and "Yorick and the Grisette" in the National

Gallery, fairly gauge his talent. This, without being at all great, has attractive peculiarities, the chief of which are his keen eye for the subtleties of humour and his real admiration of innocent beauty.

"Out-of-Doors Genre."

Half-way between the painters of landscape and the painters of genre come the painters of what has been conveniently called "out-of-doors genre," that is, of landscape with figures, the figures being introduced not merely to give accent to the landscape, but so as to constitute the predominant interest in the picture. Though not as a rule men of great talent, they form a group of some importance in this period. One such was William Collins, the son of a picture-dealer in Great Titchfield Street, London. He was born in 1788, and so was a few years younger than Wilkie, whose fellow-student he was at the Academy school. The family had a business acquaintance with the ne'er-do-weel Morland, from whom Collins received much instruction, and from whom he doubtless imbibed that strong sympathy with the country and country life that makes his principal charm. His was a little talent, but it was exactly in accord with the humour of his countrymen. His best work was executed between 1812 and 1836, in which last year he made a Continental journey, remaining in Italy nearly two years. This was still more injurious to him than a similar sojourn was to Wilkie, and Collins's later pictures, which include such ambitious subjects as the "Disciples at Emmaus" and "Our Lord among the Doctors of the Temple,' are deplorable.

Thomas Good.

An infinitely sounder talent was that of his contemporary, Thomas S. Good, the son of a Berwick tradesman. It is not known whence came his singular skill. He painted good portraits, including one of Bewick the engraver, and also many specimens of indoor and outdoor genre. His figures are masterly, and for strength of drawing and brilliancy of touch, though the scale he uses is small, he is second to none of his contemporaries. He painted many groups of smugglers, fisherfolk, and the like, in which he brings in, with excellent discretion, the rough cliffs of the Northumbrian coast. He is best seen in these examples, as they permit us to gauge his mastery both over landscape and figures, and the certainty with which he can render atmosphere and textures, the oily surface of a calm sea, the rich dulness of old leather, or the

silvery haze over the shining sands. Good's artistic gift was, in truth, admirably round and complete; but lacking, as by ill luck it did, both the stimulus of ambition and the goad of poverty, it wasted itself on trifles and in the obscurity of a petty provincial town.

Richard Bonington.

One hardly knows whether England can fairly claim Richard Parker Bonington as one of her artists. But he is one of the rare geniuses that belong wholly to the period under review.

MOUNT ST. MICHAEL, NORMANDY, BY RICHARD PARKER BONINGTON.
(*Victoria and Albert Museum.*)

His father was governor of Nottingham Jail, but in 1816, at the age of fifteen, the son was sent to Paris, where later he entered the studio of Gros. His career was of the shortest. In 1824, when he was already famous in Paris, he exhibited a series of Venetian sketches in London, which excited universal admiration. His versatility was amazing, and he has left behind works that are almost masterpieces, both in genre and in landscape. His genre subjects, chiefly taken from French history—episodes in the lives of Henry IV., Francis I., and the like—are of quite singular distinction. Never stagey or melodramatic, he has the finest instinct for naturalness and simplicity of pose, and in these interiors he shows himself a master of

rich colour and of warm atmosphere. But it is as a landscape-painter, even more than as a painter of genre, that Bonington will be always attractive to his countrymen. He is as thorough a *plein-airiste* as Constable, and with a wider sympathy. Storm and sunshine, the gold of Venice in autumn, and the grey of the Channel coast in winter, serve him equally well. His short working life was prolific, and his death, though England first heard his name only three and a half years before he died, was rightly described by Sir Thomas Lawrence as a national misfortune. It was caused by sunstroke, got while sketching in the environs of Paris. He came to London in the hope of recovery, but disease attacked his lungs, and thus the artist of, perhaps, the greatest promise born in England in this century was cut off at the age of twenty-seven.

William Etty.

One of the most singular products of the age was William Etty, who, coming, as it were, from no school, and leaving behind him no followers, succeeded by sheer individual force of will. He was the son of pious Methodist parents, bakers by trade, and was born in York in 1787. A generous uncle, who admired the boy's passion for drawing, brought him to London, and at the age of twenty entered him as a student at the Academy. His first efforts were in landscape, where he had little success, and his attempts at portraiture, even after a year's instruction in Lawrence's studio, were equally futile. Afterwards, as he says in his quaint autobiography—

> "When I found that all the great painters of antiquity had become thus great through painting great actions and the human form, I resolved to paint nothing else. And finding God's most glorious work to be *woman*, that all human beauty had been concentrated in her, I resolved to dedicate myself to painting—not the draper's or milliner's work, but God's most glorious work—more than ever had been done before."

No painter was more slow in obtaining success. He never won a prize at the Academy, and it was not until 1821 that he made his mark with "Cleopatra sailing down the Cydnus." He had already been abroad for short periods, but soon after that success he made a long stay in Italy, where his work proved popular amongst the Italians, the Venetians electing him a member of their Academy. At home, however, he was chiefly an artists' favourite. Thus it was Lawrence who bought his "Pandora," and helped him to the Associateship of the Academy, which

he obtained in 1824, and John Martin became the purchaser of his fine picture of "The Combat: Woman pleading for the

YOUTH ON THE PROW AND PLEASURE AT THE HELM,
BY WILLIAM ETTY, R.A.
(*National Gallery.*)

Vanquished." The unpopularity of Etty's pictures—in which, true to his original aim, "woman, not the draper's or milliner's work," was the principal subject—is a curious sign of the times. They often show not only a profound appreciation of sensuous

beauty, but a true feeling for decoration. His flesh, too, is frequently clean and sweet in colour, though somewhat generalised in texture, and looking at this day somewhat wanting in transparency. One may add that his nude figures, his "Heros" and "Andromedas" are singularly inoffensive, and there is not a hint of salacity in the whole series. But English society, which looked to George IV. for its standard of purity and

SUNSET OFF HASTINGS, BY COPLEY FIELDING.
(Victoria and Albert Museum.)

refinement, seems to have been genuinely shocked at the very moderate realism of the Nonconformist painter.

Water Colour.

The time of the Regency and when George IV. was king was a considerable epoch in the history of water-colour painting. We have already described the art of Samuel Prout, one of its most accomplished exponents, as falling naturally among the painters of architecture But the list of his brother-artists, found at the same time in the maturity of their powers, is long and important. Besides Prout, there is Heapley the figure-painter, John Varley the great teacher, De Wint, Robson, Copley Fielding and David Cox, the early *plein-airistes*, and

Hills the animal-painter. A little later we have Cattermole the draughtsman of dramatic genre, William Henry Hunt the master of still-life, Lewis the great Oriental colourist, and Samuel Palmer. Of these, Prout, Heapley, Hills, Varley, De Wint, Cox, and Fielding were born, all of them, in the first fifteen years of the last quarter of the eighteenth century, while another two decades saw the birth of the rest. Of these, special

THE SIGNBOARD OF THE "ROYAL OAK," BETTWS-Y-COED, 1847, BY DAVID COX.

mention must be made of Copley Fielding and David Cox. The former was a great talent led into overproduction and emptiness by popularity. But seen at his best he is second only to Turner in the rendering of spacious, airy perspective. **Fielding and Cox.**

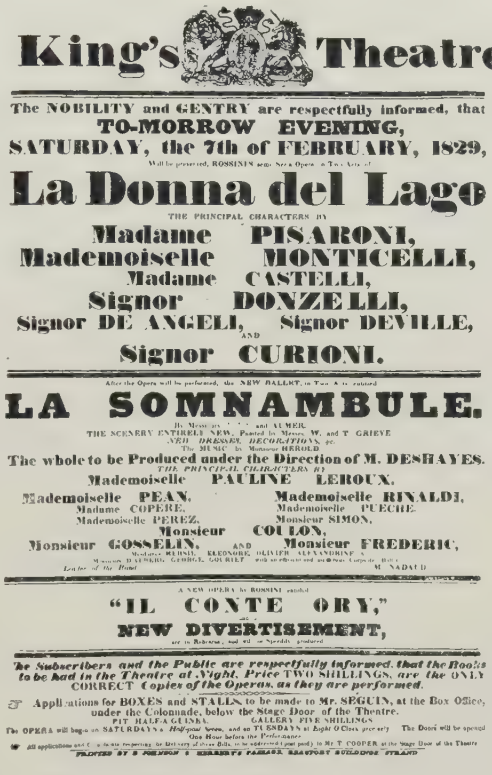
David Cox, "the inspired sketcher," is still more eminent, holding, in relation to water-colour, a position analogous to that of Constable in regard to landscape in oils. He was the son of a Birmingham blacksmith, and was preserved, by the fortunate accident of a broken leg, from following his father's

trade. A box of toy paints given to the sick child determined his future career. With a few lessons from one Barker, a local drawing-master, and such hints as he could pick up at the theatre, he rose to be scene-painter in his native town, and in a like capacity served various travelling companies. Tired of this wandering life, he came to London, fell in with Varley, who invited him to his studio. But he himself was in truth his only master. Owing to his imperfect training, exactness of outline and modelling were at all times difficult to him; but he supplied the defects by a masterly precision and harmony of colour, and an exact feeling for mass and the graduated dimness of a far-reaching prospect. The result is that the facts of his landscape swim up out of the haze, like the real things of earth out of the air-clothed distance. His execution is remarkable; for with an unequalled subtlety and perfection of tone, and a poetic imagination guided by infallible taste, is combined the loosest possible handling, in which truth of form is always neglected for truth of generalisation. He has even been compared with Turner himself. But Turner may be said to have mastered the whole range of landscape beauty; the whole earth is his province; Cox is satisfied with one corner, England and Wales, and the beauties of its temperate climate. But within his range he was without a rival. Born in 1788, he lived till 1859, and, working till his death, left behind him a vast body of precious drawings In later years he painted almost entirely at Bettws-y-Coed, in North Wales, finding in that beautiful valley, its steep mountain sides and its foaming torrents, just such inspiration as Constable found in the flat Suffolk plain and the slowly-moving Stour.

H. SUTHERLAND EDWARDS. Music and Society.

EIGHTY years ago England, without possessing any very eminent composers of her own, was already well in touch with the leading masters of the Continent. Beethoven had just written his Ninth Symphony for the Philharmonic Society, and Weber his *Oberon* for Covent Garden. Rossini had but recently visited London, where he engaged (according to the memoirs of the period) to compose for the King's Theatre an opera, to be entitled *Ugone Re d'Italia*, which, for some unexplained reason, was never finished. London maintained at

that time two important concert societies—the before-mentioned Philharmonic and the Society of "Antient" Concerts—to give the qualifying word its own significant spelling. Much of the modern music of those days is "antient" now, especially the music of the operatic stage. Rossini had with *Semiramide* just finished his Italian career, and was about to establish himself in Paris, where he was to produce a series of operas, renovated or altogether new, ending with his masterpiece, *Guillaume Tell*. Donizetti and Bellini were as yet unknown, while Meyerbeer was known only as a composer of Italian operas, *Margherita d'Anjou* and *Il Crociato;* the latter work remembered only in the present day as the last in which that highly artificial vocalist, the male soprano, was heard.



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ITALIAN OPERA PLAYBILL, KING'S THEATRE.
(*British Museum.*)

The two great concert societies, to both of which it was a distinction to belong, gave between them twelve concerts in the course of the year. At the Italian Opera, of which the King's Theatre (afterwards Her Majesty's) was the scene, there were two performances each week during the season. The subscribers belonged almost exclusively to the aristocracy, and the gatherings between the acts in the so-called *foyer* were assemblies of rank and fashion such as might have taken place, as

the result of invitation, at the house of some great nobleman. The subscribers, all belonging to the same set, did not sell their boxes to outsiders when they were unable themselves to use them. They placed them at the service of friends.

The prices of admission were very moderate compared with those charged in the present day. Stalls had not yet been introduced. But a ticket for the pit cost eight and sixpence if bought in advance, or ten shillings if paid for at the doors on the night of performance. The singers received about a tenth part of what is paid to them now, except in the case of some phenomenal star like Catalani, to whom everything was sacrificed, and who took, by way of remuneration, the whole of the receipts, *minus* such expenditure as was absolutely inevitable, together with a trifling little bit for the unhappy manager, who then, as now, whatever efforts he might make to keep his head above water, was sure to go under at last. No more appropriate phrase could have been put into his mouth than the one assigned to him by a writer on this subject: *Bankrupturus vos salutat!* But the operatic gladiator was a personage so long as the struggle was kept up. He lived sumptuously, and, for a time, was one of the lights of the artistic and fashionable world.

The Performers.

The singers (who had not yet learned to describe themselves as "artistes") were looked upon in the best society as mountebanks of a superior kind. They were engaged to sing at evening parties, but, far from being allowed to mingle with the guests, were penned off like cattle in their own allotted corner of the room. Rossini, whose first visit on reaching London was, by his Majesty's special desire, to King George IV., could not but be treated with honour wherever he went. Spohr, too, arriving with introductions from some of the most important personages in Europe, treated as equals those whom he could not possibly look upon as his superiors. He ignored the silken cord which separated the singers and musicians from the company whom it was their duty to entertain. But before ignoring it he had noticed its existence, and he speaks of it with amazement in one of his letters from England. It was always let down, too, for Henrietta Sontag, who, besides introductions from members of the Prussian Royal Family, had brought letters to England from Goethe. The old poet admired her on

the public stage, and adored her in private life, telling Eckermann that though it was "a joy to hear her sing," yet that to converse with her was, still more emphatically, a "sweet delight." To the last a passionate worshipper of charming women, he had a correspondent in London who kept him constantly informed as to Sontag's movements, and he heard with satisfaction that she was everywhere and in all kinds of society appreciated at her true worth.

The Social Estimate of Music.

Music, however, in those days, was not thought much of in England. The spirit was still among us of Lord Chesterfield telling his son not to learn to play the fiddle when, by paying money, he could get someone else to play it for him; which is about as sensible as it would be to tell a lover of pictorial art not to paint pictures himself when, at so much apiece, he could get pictures painted for him.

In the early part of the century, and even a little later, the study and practice of music was really looked upon as an unworthy occupation for gentlemen, because an unmanly one. Even in the early 'forties an undergraduate at Oxford was hissed, hooted, and put to flight because at a local concert he ventured to play the piano. Now and then a lord came forward as an amateur composer—the Earl of Mornington, for instance, and, again, the Earl of Westmorland. But these were the eccentricities of great noblemen. Besides, they did not play. They hired (though in no Chesterfieldian spirit) musicians to play for them.

Lord Westmorland's most important work in connection with music was the establishment of the Royal Academy, which at once underwent the influence of the recently founded Conservatorium of Leipsic under the direction of Mendelssohn. It was by Mendelssohn himself, rather than by his great music-school, that the influence was exercised. Two, in any case, of the best of our Royal Academy students, William Sterndale Bennett and George Alexander Macfarren, went to Leipsic, where, thanks to Mendelssohn's recognition of their remarkable talent, several of their orchestral compositions were produced at the Gewandhaus concerts. Each of these composers became in due time chief of the institution at which, as young men, they both had studied.

T. G. BONNEY. Geology.

GEOLOGY as a science had a long infancy. At the end of the last century it was still far from the adult stage. The year 1815 witnessed an event which produced on the future of the science effects hardly less important than those of the Battle of Waterloo on the future of Europe. This event was the publication of William Smith's Map of the Strata of England and Wales. It was the outcome of more than twenty years of indefatigable labour, undertaken by a simple land surveyor, dependent for a living on his professional earnings. It conducted him to fame and to poverty. At the time when he was engaged on his work geologists were divided into two schools—the one, often called the Neptunists, of which the leader was Karl Werner, the eminent German professor; the other the Vulcanists. These regarded as their founders Dr. James Hutton (Vol. V., p. 566), who died in 1797, and his friend and expositor, Dr. John Playfair, who was still living in 1815. Both were born north of the Tweed, where, however, the disciples of Werner found an able champion in the person of Professor Robert Jameson, who had studied under that master at Freiberg in Saxony.

Smith's Stratigraphical Map, 1815.

Neptunists and Vulcanists.

Werner's leading idea was that "the earth had been originally covered with an ocean, in which the materials of the minerals were dissolved." Out of this ocean he conceived that the various rocks were precipitated, in the same order as that in which he found them in Saxony; hence, "on the retirement of the ocean, certain universal formations spread over all the globe, and assumed at the surface various irregular forms as they consolidated."[1] He had indeed caught a glimpse of a great truth in regard to the chronological grouping of strata, but he had ignored many facts of primary importance, even going so far as to assign to basalt an aqueous origin. Hutton and Playfair, on the contrary, repudiated all cosmological speculations, and sought to make Nature her own interpreter. They explained the past by the present, and appealed to the action of streams and sea, of all the processes of decay and renovation still at work, to account for the geological changes of which the earth's crust bore record. Its history they deemed to extend back into an illimitable past, for it disclosed, as they affirmed, no sign of a beginning,

[1] "Life of Sir R. I. Murchison," by Prof. A. Geikie, vol. i., p. 100.

or forecast of an end. At the date named the Huttonian school certainly had prevailed in England, and it had been strengthened by the foundation of the Geological Society of London, in 1807, with the avowed object of gathering facts as to the composition and structure of the earth, without reference to questions of theory. But the northern teachers of geology—partly, perhaps, owing to local circumstances—had paid little attention either to fossils or to the succession of the rocks established by them; in other words, either to palæontology or to stratigraphy. The impulse towards these was given by the work of William Smith, and they became for many years the chief subjects of study among English geologists.

DR. JOHN PLAYFAIR, BY SIR HENRY RAEBURN, R.A.
(*National Portrait Gallery.*)

The twenty years that succeeded the foundation of the Geological Society was one of great activity and earnest work in the science. This Society numbered among its earliest members a remarkable group of men, most of them still in the prime of life, many of them fortunate in the possession of means ample enough to free them from the fetters of a profession or of business; men such as Buckland, Conybeare, De la Beche, Fitton, Greenough, Francis Horner, MacCulloch, Scrope, Sedgwick, Warburton, Whewell, and Wollaston. These, where not original members, came dropping in during the first dozen years of the Society's history, and were quickly followed by Lyell, Mantell, and Murchison. Though one or two of the first group still adhered to the old ways, and even undervalued palæontology, the majority of them went eagerly along the lines

Founders of British Geology.

indicated by William Smith, and addressed themselves to working out in detail those stratigraphical facts which he had drawn in outline with a master's hand. In 1825 a Royal Charter was granted to the Geological Society, and the official recognition thus secured subsequently assumed the more substantial form of giving it a "local habitation" as well as "a name."[1]

At the date of the Society's charter the principal tasks which awaited its members were two in number: one, the extension of William Smith's method of arrangement to the vast masses of rocks underlying the Carboniferous system, rocks which, in other words, were more ancient than those containing the coal-measures. These rocks, though sometimes fossiliferous, were often, and this through great thicknesses, apparently barren of life; they were faulted, folded, affected by disturbances and mineral changes to a much greater extent than was usual with the more recent rocks; they also occurred in less accessible districts; so that the geologist, at first, had considered it the wisest course, on meeting with them, to glance and pass on. He termed these collectively "Transition" rocks, described them as "greywackes," and left them for future work.

Catastrophists and Uniformitarians.

The other task was an extension of the Huttonian principle which its author does not appear to have contemplated. Catastrophic geology, as it is now generally termed, was in vogue during the first quarter of the nineteenth century. It was then generally supposed that this globe had been the scene of a series of catastrophes, each of which had closed a long epoch of comparative repose, had been fatal to all living creatures, and had been followed by a new exercise of creative force. The appearance of man and of the fauna and flora which now exists upon the earth had been heralded by the last of these catastrophes. Such notions served to avert, at any rate to a considerable extent, the denunciations of theologians, who viewed the new science with no little suspicion, owing to the obvious difficulty of reconciling its results with the statements in the book of Genesis; but beyond all doubt the supposed

[1] The Society received apartments at Somerset House in 1828, and was transferred to its present abode in the new buildings of Burlington House in 1874.

necessity of doing this was for a long time a serious impediment to real progress. But as the fossil contents of the earth became better known, and the strata themselves were studied over wider areas, it became more and more difficult to find any place for these epochs of catastrophic destruction, while examination into the action of existing causes made their occurrence not only an unnecessary but also a far less probable assumption. It had been long supposed that the most recent and most superficial terrestrial deposits bore unequivocal testimony to the action of at least one mighty deluge; but in regard to these also a few geologists, more keen-sighted and thoughtful than their neighbours, began to doubt not only the interpretation of the evidence, but also the adequacy of the cause.

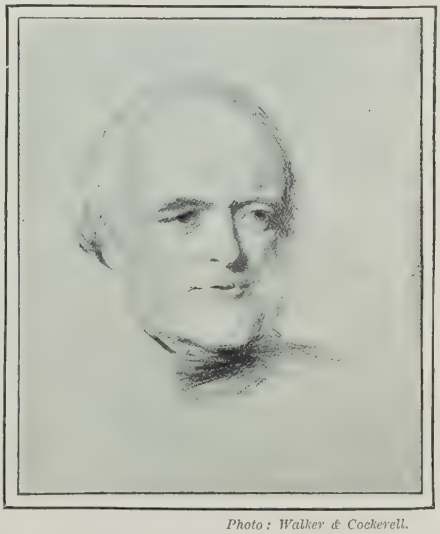


Photo: Walker & Cockerell.

SIR CHARLES LYELL, BART., F.R.S., BY GEORGE RICHMOND, R.A.

(*National Portrait Gallery.*)

The leader of this band of sceptics, the man who may claim to have done more than any other in the nineteenth century to purge geology from crude speculation and to vindicate its position as a science, was Charles Lyell, the eldest son of a Forfarshire laird, a young barrister, who joined the Geological Society in 1819, soon after taking his degree at Oxford. He became speedily enthusiastic in working out the succession of the Tertiary deposits, to which William Smith had paid less attention than to the Secondary strata, and in a few years, about 1827, conceived the idea of the book which afterwards established his reputation. This, as he mentions in 1829, was to be entitled "Principles of Geology: being an Attempt to explain the Former Changes of the Earth's Surface by reference to Causes now in Operation." The first volume of the work

Sir Charles Lyell.

appeared in January, 1830, the second just two years later, the third in May, 1833. In order to prove the gradual passage from past geological ages to the present one, it was necessary to study the Tertiary deposits with exceptional care; while to establish the adequacy of existing causes, the effects they were still engaged in producing had to be investigated. For both these purposes travel beyond the limits of the British Isles was necessary. In them the later half of the Tertiary record is extremely imperfect; in them we have no active volcanos or lofty mountains, no glaciers, snow-fields, or large rivers. During the five years, beginning with 1828, while his book was in progress, Lyell devoted nearly one-third of the time to travelling in France, Germany, Switzerland, Italy, and Sicily, besides paying a short visit to an interesting volcanic district in Spain, as well as continuing to make occasional excursions in his own country. It was no light task that lay before him. Almost all the leaders of his science were more or less imbued with catastrophic notions. Scrope, perhaps, of those already named, was the only one who had heartily espoused the "Uniformitarian" creed. But the wealth of illustration, and the sound inductive reasoning exhibited in the "Principles of Geology," aided by its lucid statement and polished style, dealt a blow to catastrophic geology, which ultimately, though somewhat slowly, proved fatal. The month of January, 1830, when the first volume of the "Principles" appeared, may be called not improperly the nativity of Modern Geology.

Sedgwick and Murchison.

But during these years work had been begun in the forbidding region of "greywacke." The first Englishman to seriously address himself to solving the difficulties of the Transition rocks was Adam Sedgwick, Professor of Geology at Cambridge. As his first contribution to this subject, he determined in general outline the nature and succession of the rocks in the Lake District and Western Yorkshire, of which indeed he was a native, for he was born at Dent, near Sedbergh, in 1786. Sedgwick next attacked a still more difficult problem, the geology of North Wales. Beginning the task in 1831 from the northern border of the Principality, he laboured assiduously to bring this region into order, notwithstanding its frequent paucity of fossils, and its ancient flows of lava and beds of tuff, the want of good maps, and sometimes of adequate accommodation. It

was a task of immense difficulty, but in the course of about three years' hard labour it was accomplished so effectually that hardly any changes of real importance have been made in the upward succession which Sedgwick established, from Anglesey as a base.

But the problem was almost simultaneously attacked from

ADAM SEDGWICK, BY THOMAS PHILLIPS, R.A.
(*By permission of J. H. Gurney, Esq., Norwich.*)

another side, and in the opposite direction, by one who had already co-operated with Sedgwick in the important investigation into the Old Red Sandstone of Scotland, during the summer of 1827. Roderick Impey Murchison began on the eastern border of the more central parts of Wales and worked downwards from the Old Red Sandstone, investigating the outcrops of the older rocks as well as some of the deposits of later age in the neighbouring counties of England and extending his researches westward into the Principality so as to traverse the

Cambrian and Silurian.

region south of that in which Sedgwick was at work; in other words, to the south, speaking generally, of a line drawn from Oswestry to the estuary of the Dovey. The results of this work were announced from time to time in communications to scientific societies, and were finally embodied in his classic work, "The Silurian System," which, however, did not appear till the end of 1838. Meanwhile the two friends combined to attack another great mass of "Transition rocks," viz. that constituting the larger part of Devon and Cornwall. This work was carried on at intervals from 1836 to 1839, and resulted in the establishment of the Devonian system of geology. The existence of such a system was inferred on Palæontological grounds by Lonsdale in 1837, and it was substantiated by their investigations; though the explorers themselves were at first reluctant to admit the general parallelism of the rocks beneath the Culm Measures of this part of England (identified with the lower portion of the Carboniferous system) and of the Old Red Sandstone of Scotland and South Wales; ultimately, however, they became convinced of its accuracy and maintained it in their publications.

Difficulties, however, even prior to the publication of "The Silurian System," had already arisen in regard to fitting together the work of Sedgwick and Murchison in Wales—difficulties which doubtless might have been cleared up had the two friends made a joint and thorough examination of the borderland. These became the origin of a dispute which ultimately led, about the year 1854, to a painful and lifelong estrangement. Of this controversy little need now be said. At first sight it seemed one only of nomenclature—viz. whether a certain important series of rocks which Sedgwick had made the upper part of the Cambrian system, as established by him in North Wales, should bear this name, or be designated Lower Silurian —the name given by Murchison to a series in his own region which had since proved to be generally identical with the above-named portion of Sedgwick's Cambrian, instead of overlying it, as had been at first supposed. The nomenclature, however, was held by Sedgwick to involve a principle. He maintained that his Cambrian system was accurate from bottom to top, and this contention has been confirmed in its essentials by all later researches; while his opponent, by confusing the

Caradoc and the Upper Llandovery groups, had missed the great physical break which split his Silurian system into two, and had left the lower part—in which also another serious error had been detected—without any definite base.

It is now very commonly held that the scientific question is best solved by recognising three distinct systems—that is, by restricting the name Silurian to the upper division of Murchison,

SIR RODERICK IMPEY MURCHISON, BY STEPHEN PEARCE.
(*National Portrait Gallery.*)

and Cambrian to the lower and middle divisions of Sedgwick's system, and by conferring a new name, Ordovician, on the part which has been the subject of debate.

Post-Devonian Systems.

Want of space forbids us to enumerate in detail, though it must not be forgotten, the advances which were being made during all this time in perfecting the work of William Smith among the great masses of stratified rock overlying and including the Carboniferous system. In this task also Sedgwick and Murchison had taken a share, the former in papers on the lower part of the New Red Sandstone (with the Magnesian Limestone of North-Eastern England), completed in 1828, and in one on deposits of the same age in parts of Cumberland and Lancashire,

in 1832; the latter in papers on the Lias and Oolites of Scotland and of some of the Western Counties in England, and on the New Red Sandstone of the Midlands. But, meanwhile, Gideon A. Mantell had been labouring at the Chalk and underlying rocks of South-Eastern England, and had discovered those wonderful reptilian remains in the Sussex Weald which were afterwards acquired for the British Museum. Fitton had worked out the puzzling strata between the Gault and the Weald; Lyell, Webster, and other workers were reducing to order the Tertiary deposits; G. B. Greenough had published, in 1820, his well-known map of England and Wales; and the "Outlines of the Geology" of the same region had been described in 1822 by W. B. Conybeare and W. Phillips. John Phillips also, the nephew of William Smith, had published the first volume of his excellent "Geology of Yorkshire" in 1829; W. Lonsdale began work about the same time on the Oolites of Gloucestershire; and almost every part of the kingdom was being assiduously searched for fossils. It must not be supposed that Scotland, the land of Hutton and Playfair, was neglected. J. MacCulloch, an accurate observer and acute reasoner, had been at work there for several years. He published his classic book, "Description of the Western Isles," in 1819, and in 1826 began, in a systematic way, his geological map of Scotland, which, however, was not published till 1836, shortly after its author's death. Lyell, Sedgwick, and Murchison, not to name others, had contributed their quota of Caledonian geology; but Hugh Miller's remarkable discoveries of fossil-fish among the Old Red Sandstone were not made known till near the end of the decade. Ireland, also, had been explored. R. J. Griffith, justly called the father of Irish geology, had published a geological map of Ireland as early as 1812, and was the author of many papers on this subject, but in this country greater difficulties attended geological work.

The Geological Survey.

Besides all this, the early years of the third decade of the nineteenth century were signalised, not only by the publication of Lyell's "Principles," but also by the appointment of a staff of workers for the Geological Survey of England and Wales. This was undertaken mainly at the instance of H. T. de la Beche. A little junior to Murchison, he also had held a commission in the army, which he had resigned in 1817 and had devoted himself to science. After a period of study on the Continent he settled

down to geology at home; and then, in consequence of a new Ordnance Survey of England, urged upon the Government the importance of laying upon the maps the geological boundaries,

HUGH MILLER, BY WILLIAM BONNAR, R.S.A.
(*By permission of the family of the late Lieut.-Col. William Miller.*)

himself taking in hand, as an example, Devon and Cornwall. The idea was adopted; a small staff, with funds and quarters equally modest, was placed at his disposal in 1832. As time went on the staff was augmented, the work extended from Great Britain to Ireland, and a Museum of Economic Geology begun, until, in 1851, the Survey was removed to the present handsome

The Royal School of Mines.

building in Jermyn Street, in association with the School of Mines, the organisation of which had been in progress for several years (p. 705). On the death of De la Beche in 1855, Murchison became Director-General, and held the post till he died in 1872. His successor was A. C. Ramsay, who, on retirement in 1881, was followed by A. Geikie (head of the Survey until 1901). The Royal School of Mines had been removed to South Kensington, and it was combined with the Royal College of Science, which developed into the Imperial College of Science and Technology. Except in one respect, to be mentioned hereafter, the Survey has done almost inestimable service, by its maps and memoirs, to British Geology.

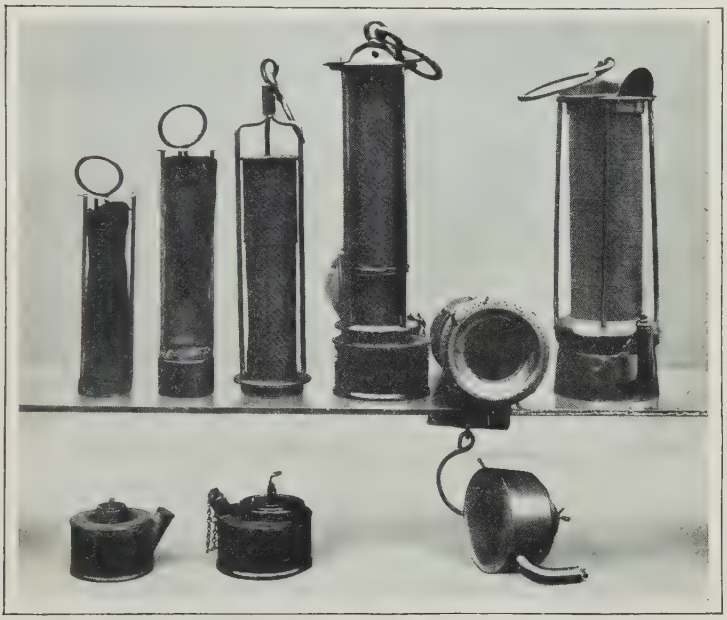
ROBERT STEELE, Chemistry

DURING the early years of the century chemistry was the science which, more than any other, influenced men's minds. It had been recognised that knowledge was international, and an honourable rivalry was set up for priority. Berzelius in Sweden, Gay Lussac and Thenard in France, strove for pre-eminence with Davy in England. The great scientific periodicals were founded, and in full working order—the *Annalen der Physik und Chemie* (1790), the *Annales de Chimie et de Physique* (1789), and a few years later the *Philosophical Magazine* (1797–98)—and any new discovery was subjected to the criticism of Europe. The Royal Society and the Institute of France set an example to others of interest in the science, and the happy fortune of the Royal Institution in securing Davy as a lecturer ensured its own success, and directed the attention of the public to a lighter side of science, which it has never lost sight of since. In 1816 Davy dealt a first blow to the doctrine of Lavoisier, that all acids must contain oxygen, by proving that what was then known as oxymuriatic acid contained no oxygen, but was an undecomposed body—chlorine. In 1813 Faraday (p. 254) was appointed an assistant at the Royal Institution, and Brande became Professor of Chemistry on Davy's resignation of the post.

Sir Humphry Davy.

In his earliest lectures at the Royal Institution Davy had laid stress on the connection between science and industry, and some of his finest work was inspired in this way. His lectures on agricultural chemistry lie at the root of all subsequent

treatises on the subject, and he was the first to insist that agriculture must look to natural science for a solution of its problems. But a still greater example of the debt of industry to science is the invention of the safety lamp (1816: p. 249) in direct response to an appeal from those interested in coal-



DAVY AND STEPHENSON SAFETY LAMPS.
(*Victoria and Albert Museum.*)

mining. With this discovery Davy's active career comes to a close.

Wollaston.

On the death of Sir Joseph Banks, Davy was elected President of the Royal Society, Wollaston (V., p. 752) refusing to be put into nomination. While he had made few great discoveries, the volume of Wollaston's work was considerable; his invention of the reflecting goniometer made modern crystallography possible, and the method of working platinum was in the first instance due to him. His cautious criticism was of the greatest service in the long discussions of the atomic theory of Dalton.

Prout's Hypothesis.

In 1815–16 William Prout (1785–1850) published papers on the relation between the atomic weights of the elements and the density of their vapours, in which the tenet was set up that the atomic weights of the elements were multiples of that of hydrogen—the lightest element known. Perhaps an idea from

SIR HUMPHRY DAVY, BY SIR THOMAS LAWRENCE, P.R.A.
(*By permission of the Royal Society.*)

which such weighty theoretical conceptions have arisen has never originated in such a faulty manner. Prout's own investigations are few and of no importance, but the prospect afforded by him of a simple explanation of the problem of the constitution of matter served as a spur to further research, which has since disproved his hypothesis.

Brande (1786–1866), who succeeded Davy at the Royal

Institution, was not a man of great originality. He was concerned with Faraday in the scientific study of coal-gas, and was a well-known writer on chemistry. He founded in 1812 the Society for the Improvement of Animal Chemistry for the study of physiological chemistry. Brande.

Another important work done in this period was Faraday's achievement in 1823 of condensing chlorine and a few other gases. The simplicity of the process and the ability shown in dealing with it marked him off as the only successor to Davy possible; but though he made several important chemical discoveries, and notably that of benzine in the liquor obtained from condensed coal-gas, his future career belongs rather to physics than to chemistry. A new generation was, however, growing up which succeeded to the achievements of Davy and Priestley, Dalton and Faraday, and built on their foundation chemistry as we know it to-day. Faraday's Chemical Work.

MANY events have combined to make the medical history of the nineteenth century remarkable. The restlessness of its opening years was a fitting prelude to the activity which has marked its whole course. The first effect of educating the rank-and-file of the profession was to evoke the critical faculty, to overthrow authority, and to widen the outlook both in medicine and in surgery. The medical practitioners in England at the beginning of this century were the physicians, the surgeons, and the apothecaries; beneath these three recognised classes was a group of nondescript persons calling themselves surgeon-apothecaries, men-midwives, cuppers, tooth-drawers, compounders and dispensers of medicines. The physicians, surgeons, and apothecaries alone had received even the rudiments of a technical education, and had submitted themselves to examination, but they formed the minority of the profession. The host of general practitioners had gained their knowledge empirically, were subject to no controlling body, and were unrecognised by law. D'ARCY POWER. Medicine and Surgery. The Profession.

The first movement in advance came from the ranks of the profession itself. Improved methods of teaching showed the general practitioner his ignorance. The better class amongst them tried to benefit their fellows by making education com- The Apothecaries Act.

pulsory; the baser sort endeavoured to limit competition by establishing legal restrictions to the indiscriminate practice of medicine. The objects of both parties were, therefore, identical though their motives were widely different. The two great corporate bodies of the kingdom were approached, but neither the College of Physicians nor the College of Surgeons was disposed to assist, still less to initiate, any change in the system to which they had been accustomed. Recourse was then had to the Society of Apothecaries, which had long fretted under the controlling action of the College of Physicians. The company was induced to promote a Bill in Parliament, and the Apothecaries Act passed the Legislature on January 15th, 1815. This Act marks a new era of medicine in England, for it ordained that no one should practise as an apothecary in any part of England or Wales without being properly qualified: that the qualification should be ascertained by examination, and that no person should be admitted to the examination unless he had served an apprenticeship to an apothecary of not less than five years, and could bring certificates of a sufficient medical education and of good moral conduct. Unlicensed apothecaries were punished by a fine, and expressly debarred from recovering any charges claimed by them in a court of law. The new Act did not affect chemists or druggists, and the licensing powers of the Universities of Oxford and Cambridge, of the Royal College of Physicians and of the Royal College of Surgeons, were exempted from its provisions. The Act introduced a new and important principle into the practice of medicine, for the State then affirmed it to be necessary for every medical man to give evidence that he possessed a minimum amount of knowledge before he entered upon the practice of his profession. Hitherto, anyone might practise his art unmolested, unless he desired to enter the Army or Navy, so long as he did not encroach upon the privileges of the various corporate bodies in the kingdom. The Society of Apothecaries executed its difficult task with judgment, and a regular system of medical education was soon developed.

Medical Teaching.

The multiplication of the private medical schools was one of the first results of the increased demand for medical education. The schools were officered by able men recruited from all parts of the kingdom, but their success made them

unacceptable to the medical schools attached to the larger hospitals in the metropolis. The teachers in the hospital schools were conservative, and held the highest official positions in the profession. The teachers in the private schools were more progressive; and though they were under the control of the Colleges, who had the power to prescribe the course of study, they had the teaching of the youth who were to become the medical profession. The physicians and surgeons triumphed for a time, and slowly each private school disappeared. The teachers died, too often heartbroken and impoverished, but their pupils survived, and their methods lived and bore fruit, for in due season the Colleges adopted and extended them.

The Anatomy Act.

Anatomy was the first branch of medicine to feel the strain of the new educational requirements. Public and private teachers were alike unanimous in insisting upon a thorough knowledge of the human body as the only true foundation of medicine. Anatomy, too, had the further advantage that, as it had some affinity to an exact science, it was of great value as an educational agent, an advantage it shared with classificatory botany. Anatomy, then, was taught with eagerness, but its practice was attended with the very greatest difficulty. No provision was made by law for dissection; dead bodies had to be obtained by exhumation, conducted either by the teacher and his pupils, or by associated bands of wretches known as resurrectionists, or body-snatchers. These methods led to frightful abuses, which culminated in murder for the sake of obtaining bodies. The atrocious crimes committed at Edinburgh by Burke and Hare in the winter of 1827–28 led to the appointment of a select committee to report to Parliament upon the proper means for securing and rendering legal the practice of anatomy. Evidence was taken in May, 1828, and, after an abortive attempt in March, 1829, the provisions of a simple but effectual Act for regulating schools of anatomy came into force upon 1st August, 1832.

Higher Medical Education.

The closing years of the reign of George IV. were a momentous time in the history of scientific medicine, for the medical profession was then fully awakened to the necessity of providing more than a minimum technical education. The idea of establishing a liberal University in London which should

be free from the trammels of the older universities and teaching bodies had been a favourite idea of the poet Thomas Campbell. The idea became a reality owing to the energy of Mr. (afterwards Sir) Isaac Lyon Goldsmid and of Lord Brougham. Active measures were taken in April, 1825, to found an establishment under the title of the London University, and in the following year seven acres of freehold ground were obtained between Upper Gower Street and the New Road. Mr. Wilkins, R.A., immediately proceeded to erect the present buildings upon the site thus acquired, and professorial work was begun in them in the autumn of 1828. The institution, commenced as a private enterprise, was strong enough to obtain a charter of incorporation in November, 1836. Some opposition, however, having arisen, and King's College having become incorporated in the meantime, a separate charter was granted in the same year to a new body, whose business it was to examine and not to teach. This body, transformed by legislation at the close of the century, obtained, and still retains, the title of London University—whilst the older teaching body in Gower Street became known by its present name of University College. The medical faculty was at first well represented by excellent teachers, but internal dissensions soon drove them out, and for the first few years of its existence the faculty passed through most troublous times. The hospital was founded on September 8th, 1828, as a dispensary, and steps were almost immediately taken to equip it for such clinical teaching as would render it most useful to the medical students presenting themselves for degrees at the London University.

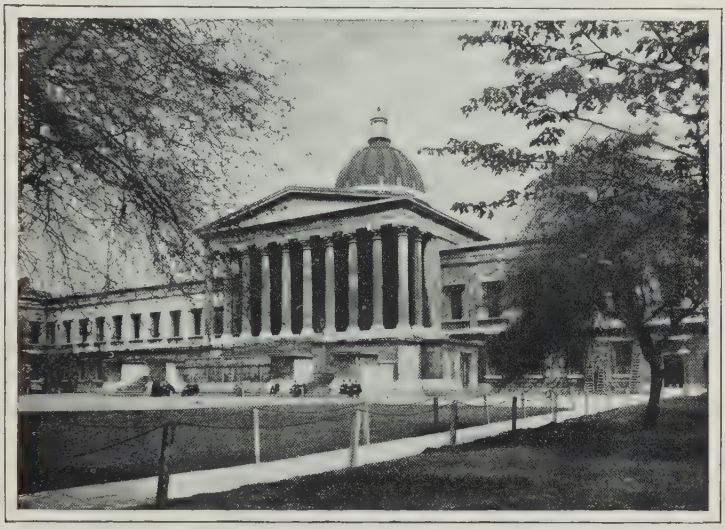
Medicine.

The teaching of medicine up to this date had been most defective in England. London then, as now, had an inexhaustible supply of material for the best clinical teaching, yet students like Robert Christison coming from Edinburgh, where clinical methods were at their best, could not conceal their astonishment at the supineness of the physicians and surgeons attached to the large metropolitan hospitals. Such students made but a short stay here, and, with a keen eye to their own interests, passed on to Paris and Vienna, where clinical medicine and surgery were well taught. A few names, indeed, saved the reputation of the London physicians, and foremost amongst

these was that of Peter Mere Latham, a writer of pure English, the teacher and friend of Sir Thomas Watson.

The revival of medicine was associated with, perhaps in part was due to, the introduction—about the year 1821—of the stethoscope as an aid to diagnosis. Auscultation was soon followed by percussion; both methods came to us from abroad, and, like many great inventions, were received with ridicule. They have revolutionised the practice of medicine, for they

The Stethoscope.



UNIVERSITY COLLEGE, GOWER STREET, LONDON.

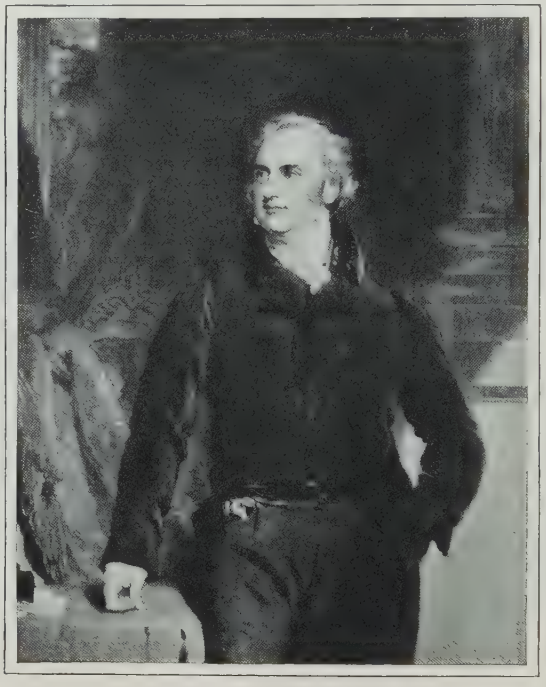
render possible an exact diagnosis, and afford information which the older physicians had been obliged to obtain from the aspect and attitude of their patients.

Surgery was in a somewhat better position than medicine during the first quarter of the century. The skill and reputation of Sir Astley Cooper was more than sufficient to maintain our reputation amongst foreign nations, but the surgical acumen of Abernethy, the penetration, the incisiveness, and power of expression of his great pupil Lawrence, and the philosophy of Joseph Henry Green advanced English surgery, and kept alive the traditions handed down from Pott and Hunter. Too much time, however, was wasted by the leaders

Surgery.

both in medicine and in surgery in promoting what appeared to be the interests of the colleges, and in those unprofitable squabbles upon questions of internal economy which have so often proved the ruin of the best minds in our Universities.

Specialism began early in the profession, and somewhat



SIR ASTLEY COOPER, F.R.S.
(*After Sir Thomas Lawrence.*)

Specialism.

earlier in surgery than in medicine. Diseases of the eye seem first to have obtained special attention during the nineteenth century, for the manipulations needed to correct its defects are necessarily more delicate than those required in many other branches of surgery. The Royal London Ophthalmic Hospital was founded as early as 1804, whilst an institution with similar objects was established at Charing Cross in 1816. Orthopædic surgery was next made a special study, and from 1830 it was looked upon as a distinct branch by the surgeons who practised it. Aural surgery became a specialty about the same time, but

laryngology did not come into existence until 1860. It cannot be doubted that the subdivision which still increases in medicine and surgery has had a baneful influence upon our profession. It has destroyed our science, though it has improved our art by giving to individuals that degree of mechanical skill which is to be acquired by repetition.

Morbid Anatomy

It is pleasant to turn from the debased condition of medicine and surgery at this time to the more fertile ground of morbid anatomy and pathology. The leaven of Hunter's influence still worked. Baillie upon the medical side and Stanley in surgical affections made careful and accurate observations upon the anatomy of diseased tissues, whilst Sir Everard Home continued to publish valuable papers of a more philosophical character. The present superstructure of morbid anatomy has been raised upon the foundations thus laid, whilst Brodie and Wardrop, Bright and Hodgkin, Addison, Paget, and Gull, have each in turn added to our stores of knowledge and have rendered possible the most accurate diagnosis. Such additions to knowledge were made formerly by individuals who could be named. It is now our good fortune that they are made by whole classes of men who have banded themselves together into the various pathological societies which are to be found in each of the towns where there is a medical school or a local hospital.

H. RIDDELL. The Textile Industries, 1815–1851.

THE marvellous change developed in the condition of England since the year 1815 is nowhere more visible than in the manufacture of textiles. Old methods have given place to new; mechanical arts and science have been lavishly called upon in the invention and manufacture of machinery, amazing in the complexity of its construction and in the perfection of the result. This development is the result of many forces, social and economic as well as inventive; but it is rather to the introduction of new processes, methods, and machines, to which attention will be given in the brief summary which follows.

At the beginning of the period under review this improvement in machinery and processes was actively in progress, and has not ceased during the many years which have followed, nor can it be supposed that the limit of skill,

ingenuity, or invention has yet been reached. In the early years of the period the power-loom was just beginning to come into use; the mule had not yet come under the reforming hand of Roberts; nor had Arkwright's slubbing and roving frames been perfected by the adoption of Houldsworth's differential motion. The hand-loom still held its ground. The advantage shown by the power-loom (V., pp. 638, 806) was so small, even so doubtful, that investment of capital in such machines seemed almost certain to result in loss. The number of such looms did not exceed four or five thousand, and experienced observers were hopeless of much increase. A contemporary writer took a most despondent view of the future of the weaving trade. He said—

"Whenever the great current of English twist flows freely into the Indian market, all the exertions to improve the steam-loom will become futile, and all the capital and machinery employed in working it a ruinous speculation. The Indian will obtain our twist, weave it into cloth, return it to England, and, with all our boasted machinery, all our steam-looms and their subordinate preparing machines, will undersell us in our own markets."

The hand-loom then held its ground, and seemed likely to do so indefinitely.

For many reasons the decay of the hand-loom industry must be regretted. It was carried on essentially in the homes of the weavers, providing employment for their wives and children without confining them within a factory, and it could be carried on in conjunction with agriculture. There was no need for the workers to gather into towns, and it was possible to carry on the trade under the most healthy and wholesome conditions. With the extension of power-loom weaving all this was changed. It was impossible to work profitably without collecting a large number of looms into one building, and the conditions which already obtained in the spinning trade became more and more the rule in the weaving. It was but slowly, however, that the hand-looms gave way to their powerful rivals, and that cottage industry was replaced by the factory system.

In considering the advance made by the textile manufacture it may be more interesting, and at the same time more effective, to select a few branches of the trade, and to follow in detail the more important changes and improvements in each. In any such selection the first place

must be given to the cotton trade, whether its importance be measured by the number of workers employed, by the capital invested, or by the total value of the product. The linen industry may be chosen for the second position, affecting Ireland in the main, as the cotton trade does England, while jute may be looked upon as a trade especially belonging to Scotland. Only a small space can be given to the silk and woollen trades, not as of small importance or outside the limits of the subject, but simply because the three trades already mentioned may be considered as sufficiently representative.

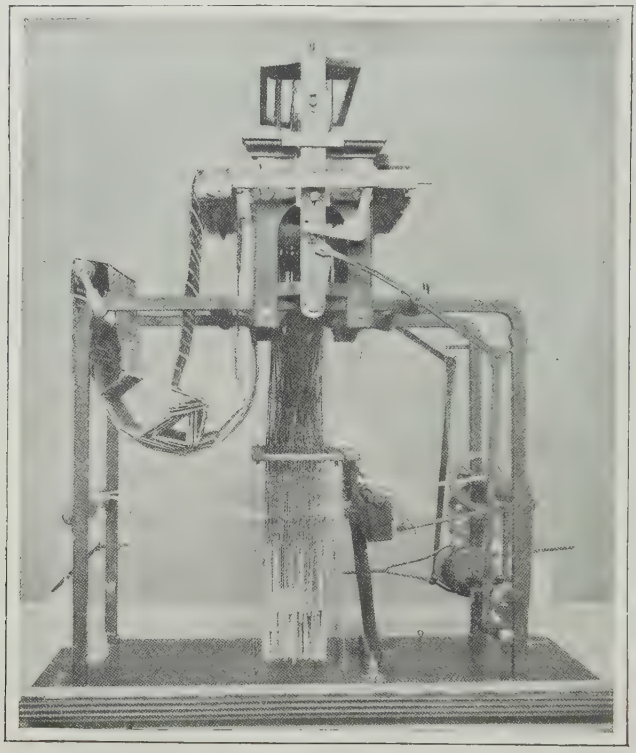
The Cotton Trade.

The cotton trade of England had made great advances before the year 1815. The labours of Arkwright and Hargreaves, of Crompton and others, had brought the spinning machinery to a state of very considerable efficiency, and it became necessary to find outlets for the twist which was poured forth so plentifully and, comparatively, so cheaply. For this purpose the power-loom was well adapted, and although its introduction was slow and experimental, yet it was not long after the year 1815 before the advantage in its use became apparent, and factories and looms rapidly multiplied. Thus, while in 1815 there were in England not many more than 3,000 power-looms, five years later the number had grown to 12,000, and by 1825 the new machines numbered 30,000.

Machine *versus* Hand Labour.

It was only by the help of improved construction and the inventive skill of many ingenious men that the power-looms obtained the decisive advantage over the old hand-looms. Yet the advance was unchecked, although the hand-loom trade fought hard, and perished slowly. In 1825 it was estimated that there were still in England 250,000 hand-looms. In 1834, when the power-looms in England numbered 100,000, a committee was appointed by the House of Commons to inquire into the impoverished condition of the hand-loom weavers. It had been represented to the House that the trade had fallen off and the workers were reduced to destitution. The evidence given left no doubt whatever of the terrible state of this once prosperous trade. The finer and more skilled branches still survived in comparative prosperity, but the weavers of such goods as common cotton shirtings could no longer earn a living, and those who could turn to no other employment had become miserably poor. The fact was that

their trade was already dead, killed by the extraordinary productive power of the 'steam" loom. Each power-loom could turn out more cloth than a hand-loom, and at the same time one weaver could attend several looms. Thus in power-loom weaving one man could produce from six to eight times more



THE JACQUARD APPARATUS.
(*Victoria and Albert Museum.*)

cloth than when employed upon hand work. Production thus cheapened naturally led to increased consumption, and thus reacted upon the spinning trade, which became exceedingly prosperous. In 1815 82,000,000 lbs. of cotton were imported, and by 1830 the import had grown steadily, until in that year it reached 247,000,000.

The Jacquard Loom.

The years between 1815 and 1830 were marked by continuous advance in construction and in invention, both in

weaving and in spinning machinery. In 1820 the first mention of the Jacquard machine appears in the patent list. It was this invention which rendered possible the use of the power-loom for goods of really complex patterns, and its introduction into the English weaving industry was an event of the greatest possible

PORTRAIT OF J. M. JACQUARD, WOVEN BY HIS OWN MACHINE.
(*Victoria and Albert Museum*)

importance. Mrs. Dresser is credited with being the first to use this machine in the Coventry silk trade, and being thus the pioneer of the Jacquard in England. Such a valuable invention could not be neglected by her competitors, and the machines soon became common in Coventry, but were not adapted to the power-loom for some years. Improvements in power-looms during these fifteen years relate rather to details of construction, none being of startling importance.

Spinning.

It was quite otherwise in spinning machinery; the years 1823 and 1826 were marked by the first steps in two inventions of revolutionary importance: the differential motion for the slubbing and roving frames, and the self-acting mule.

The Differential Motion.

It is not settled whether to England or America is due the invention of the differential motion, but there seems to be no doubt that Asa Arnold first applied this exceedingly beautiful device to cotton-spinning. It was patented by him in America in 1823, and in England by Houldsworth in 1826 in an improved form. As applied to the slubbing and roving frames by Houldsworth, the invention at once took rank as of the very highest importance. The difficulty encountered and overcome is easily understood. In throstle-spinning machinery the resulting thread is wound upon the bobbin by applying friction to the latter so as to sufficiently retard its motion compared with that of the flyer. Thus it is the thread which drags the bobbin round, and at the same time bears the additional strain of the friction necessary to wind it upon the bobbin. In the preparing frames, known as slubbers or rovers, the bobbins were necessarily large and weighty, and the yarn could not be given twist sufficient to strengthen it, as such twist would render it altogether unsuitable for the succeeding operation. It was therefore necessary to drive the flyer and bobbin independently, and to maintain a proper and exact proportion in their speeds. This involved altering the speed of the bobbin at every reverse of the building motion, as it was necessary to allow for the increasing diameter upon which the yarn was wound. This was accomplished by the differential motion in the neatest and most perfect way, and it is difficult to see how the movement can possibly be improved. Details of construction vary, but the principle of the mechanism is to-day just as it was applied by Houldsworth.

The Self-Acting Mule.

Roberts's invention of the self-acting mule made an even greater advance in the productive capacity of cotton-spinning machinery. Up till this time the hand-mule was the machine most used in spinning wefts, the throstle yarn being much better adapted for strong warps. Indeed, it was impossible to spin weak wefts to advantage in the throstle, owing to the yarn not being sufficiently strong to drag round the bobbin. The cost of spinning wefts of finer numbers was very heavy, being about 5d.

per lb. for 60's. Gradually, however, about 1830, by coupling mules together and applying power to help the spinner with some of the motions, this last was materially reduced. By the introduction of Roberts's mule, self-acting in every movement, the cost became a mere fraction of the 5d., and the effect upon the trade may be easily understood. Roberts took five years to develop and complete his invention, his final patent not appearing until 1831.

RICHARD ROBERTS, AFTER A. RIPPINGILLE.
(*The Royal Museum and Art Galleries, Salford.*)

Richard Roberts was a man of great inventive power, who conferred an enormous boon upon the cotton industry; but, unlike Arkwright, he seems to have been unable to derive personal benefit from his many inventions, and was in poverty at the time of his death. His mule remains unaltered in principle at present, though wonderfully improved in detail.

Many other inventors took part in the improvement of the preparing and spinning machinery; and such men as Whytock, Smith of Deanston, and Evan Leigh contributed much towards its present perfection.

Improvements, 1830-1851.

After 1830, and up to 1851, progress in spinning was chiefly obtained by continuous improvement in details of construction and accuracy of adjustment of the machinery employed, and by the steady increase in skill of the workers. In weaving machinery Kenworthy and Bullough made a noteworthy advance in 1841 by introducing the weft stop motion; while the invention of the double-acting Jacquard by Barlow, in 1849, was a real and most important improvement. By careful attention to the details of loom-construction the speed was

greatly increased, and the use of automatic machinery was greatly extended in the manufacture of goods of increasing fineness and complexity.

The progress of the trade was great and continuous. Thus, in 1835 the consumption of cotton was 318,000,000 lb.; in 1840 it had risen to 459,000,000 lb., while in 1851 it reached 659,000,000 lb. The trade had thus increased eightfold in thirty-six years.

There is a common feeling that England has lost by such free exposures of her best machinery and practice at the great Exhibitions, of which 1851 was the first; and there is no doubt that foreign spinners learnt from the English show in Hyde Park, and that valuable hints and ideas were carried home from the centre of the cotton trade. At the same time it is equally true that the English trade gained by the adoption of at least one foreign invention shown, which cheapened and greatly improved the production of fine yarns. This invention was the combing machine of Heillman, and to this extent the cotton trade of England gained by the great Exhibition of 1851.

R. E. PROTHERO. Agriculture, 1802-1832

Up to the close of the eighteenth century, it was the exception, rather than the rule, to find the cultivators of the soil dispossessed of all rights over the land they cultivated (Vol. V., p. 131). The characteristic feature of the period in review is that, within its limits, this exceptional condition became the almost exclusive rule. Between the years 1802 and 1832 the existing system of British farming, by which land is owned by landlords, occupied by tenants, and cultivated by labourers, became practically universal. In this country it has been so long established as to make the present generation forget that, in anything like its present extent, it is not yet a century old.

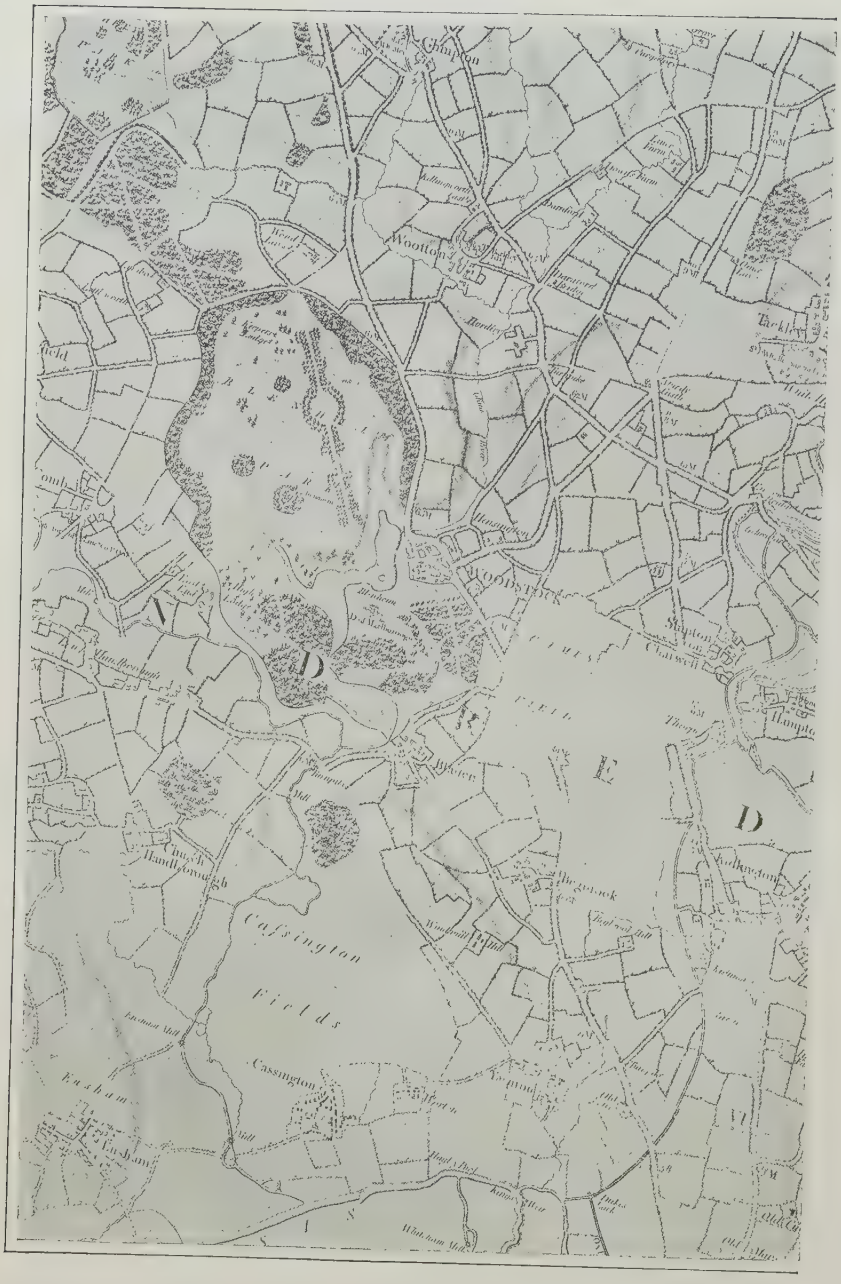
Revolution in Land Tenure: Enclosures

We have already seen that the immense impulse given at the close of the eighteenth century to enclosures of wastes, commons, and open-field farms reduced a large number of cottagers, copyholders, and cultivators of village farms to the position of wage-dependent labourers (Vol. V., p. 624). In the reign of George III. alone, 6,288,810 acres were enclosed. Economically, there can be no question that the change was advantageous; it was, in fact, demanded by national necessities.

Without it the soil would have remained undeveloped, its natural fertility neglected, its powers of supporting a growing population wasted. It was also urged, and with partial truth, that enclosures were a moral gain, because the commoners were an "idle, wretched class," who relied on a precarious subsistence, eked out by pilfering. On the other hand, it was contended that enclosures depopulated the country districts, and inflicted irreparable injury upon the poorer classes. So far from decreasing the rural population, experience proved that their numbers were rather increased by a change which extended tillage at the expense of pasturage. The real argument against enclosures was the injury they often inflicted on the poor. In 1772 a remarkable pamphlet on "The Advantages and Disadvantages of Inclosing Waste Land" was written by "A Country Gentleman." The writer strongly advocated a change which, as he showed, enormously profited the landlord, the farmer, and the nation. But he also recognised the loss which it inevitably entailed upon the "small common-field farmer," who must necessarily become a "hired labourer." To make the lot of these "reduced farmers" as easy as possible, he recommended that "a sufficient portion of land" should be "laid" to their cottages to enable them to keep a cow or two.

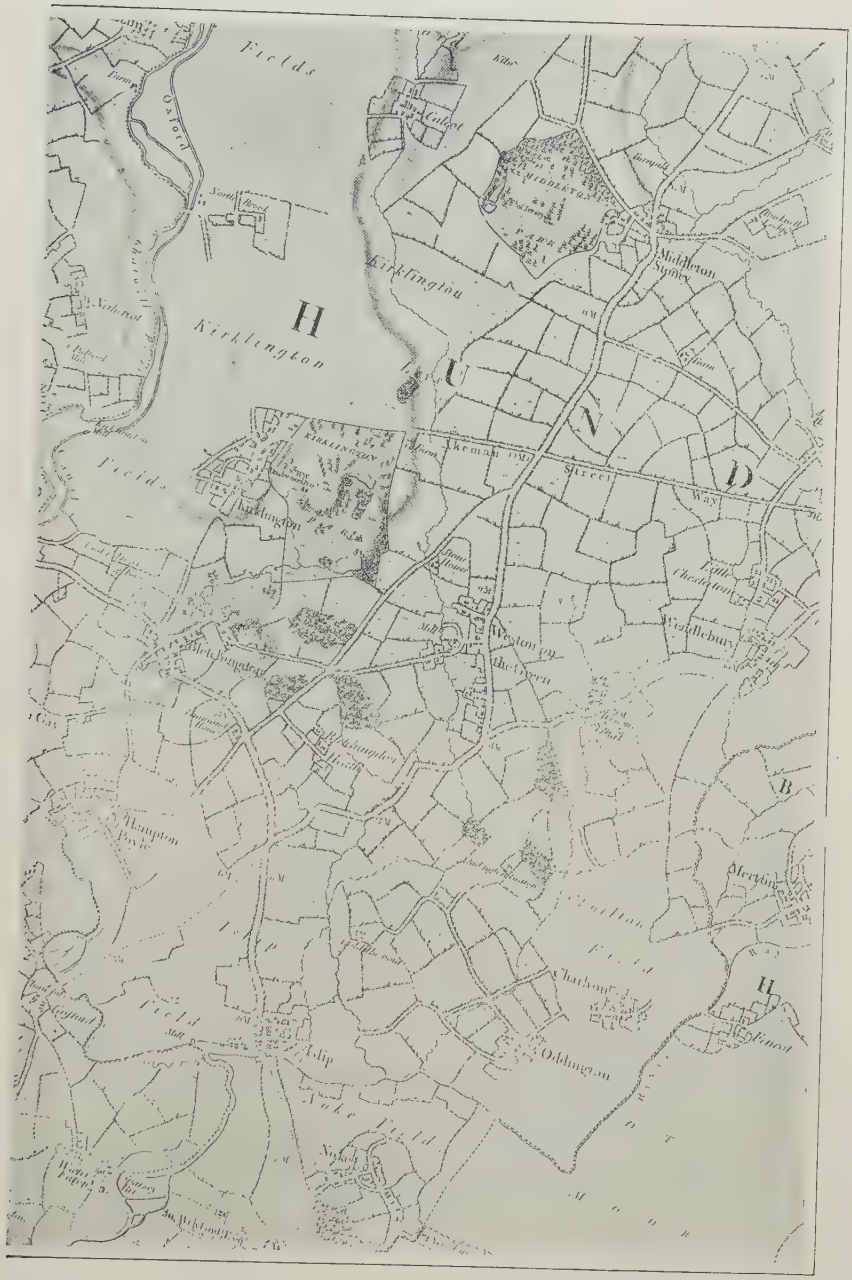
Effect on the Rural Labourer.

The predictions of "A Country Gentleman" were remarkably fulfilled, both as to the loss and the gain derived from enclosures. Arthur Young, ardent advocate of the change though he was, lamented its disastrous effect on the general condition of the labouring population. Many of the commoners failed to prove their legal rights; others were assigned too little land to maintain a cow; others were persuaded to sell their allotments before, or after, the award was made; often the allotments were made to the owners and not to the occupiers of the cottages. Sometimes, on the other hand, the interests of the poor were carefully protected, strict legal proof was not required, and sufficient land was allotted for the summer and winter keep of their cattle. Young, in "The Question of Scarcity Plainly Stated" (1800), advises that every scrap of waste and neglected land should be converted into possessions for the poor, and that all labourers should be assigned gardens and grass-land for the keep of one or two cows. Another writer, Thomas Wright, in "The Monopoly of Small Farms a Great Cause of



PART OF OXFORDSHIRE AND BERKSHIRE

(*From the Survey*



IN 1797, SHOWING OPEN FIELDS.

by K. Davis.)

the Present Scarcity" (1795), complains that England produced less poultry, eggs, and pigs than formerly, and urges that associations should be formed to purchase large estates, divide them into small farms, and let or sell them to small farmers. But the mischief was already partly done. In 1801 Arthur Young wrote a pamphlet "On Wastes," in which he gives the result of some inquiries that he had instituted into the effect of enclosures. "Many kept cows that have not since," is his frequent summary of results. Out of thirty-seven parishes he found only twelve in which the condition of the poor was improved by the compensation for the loss of their commons. "It is computed," writes the author of "A Plan for Relieving the Rates by Cottage Acres" (1817), "that, since the year 1760, there have been upwards of forty thousand small farms monopolised and consolidated into large ones, and as many cottages annihilated."

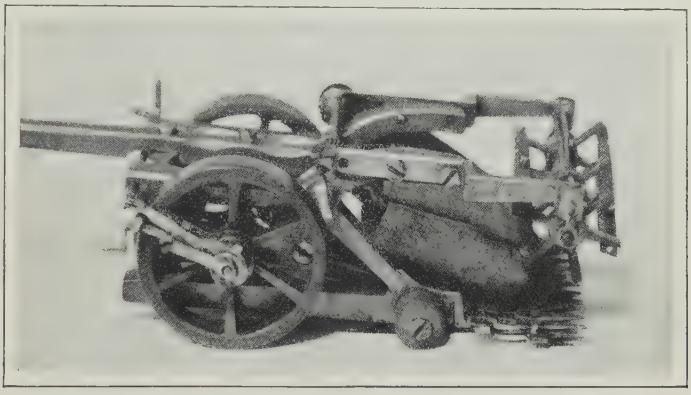
Social Distress.

The sudden displacement of so many cottagers, commoners and open-field farmers, occurred at a difficult crisis. At the moment when they lost the grazing rights on which their existence depended, they also found their domestic industries superseded by manufactured goods. Population was shifting from the south to the north, and old markets were deserted for those which now sprang up round the coal and iron fields. As machinery was introduced, thousands of handicraftsmen were deprived of their livelihood. So long as the French war lasted, the prices of necessaries were doubled, yet wages remained stationary. When peace was proclaimed, the disbanding of soldiers, sailors, and militiamen increased the distress of the rural population. These difficulties were aggravated by the mischievous administration of the Poor Law. The weekly earnings of labourers were supplemented from the rates by allowances for children, and the man with the largest family thus became the cheapest implement for the farmer to employ. Hence, also, single men were thrown upon the rates, and improvident marriages were encouraged. Napoleon was the Triptolemus of British farmers, who found their profits swollen by the Corn Laws, improved markets, and war prices, while their labour bills were paid by the ratepayer. For landlords and tenants the period was one of unprecedented prosperity; for wage-earning labourers it was one of almost unparalleled misery.

The reclamation of heaths and commons demanded a vast

expenditure of capital. An equally large outlay was required to restore fertility to the barbarously cropped and impoverished open fields. But land was a profitable investment, and money was poured into farming. Large landlords, like Mr. Coke of Holkham, Lord Rockingham at Wentworth, the Duke of Bedford at Woburn, Lord Egremont at Petworth, Lord Kames and Sir John Sinclair in Scotland, put themselves at the head of the movement of agricultural enterprise. The King rejoiced

The Advance in Farming.



MODEL OF THE REV. PATRICK BELL'S REAPING MACHINE 1826
(*Victoria and Albert Museum.*)

in the title of "Farmer George," contributed articles, under the signature of Ralph Robinson, to Young's "Annals of Agriculture," kept his model farm at Windsor, and experimented in stock-breeding. Fox, even in Paris, considered whether the weather was favourable to his turnips at St. Anne's Hill, and Burke conducted experiments in carrots as a field crop on his farm at Beaconsfield. Men kept their eyes open for every new book which appeared on the subject of farming, and Miss Edgeworth's volume on "Irish Bulls" was ordered by the secretary of an agricultural society as soon as it appeared. Nor were the clergy less enthusiastic. An archdeacon, finding the churchyard cultivated for turnips, remarked to the rector, "This must not occur again." The reply, "Oh, no! Mr. Archdeacon, it will be barley next year," shows that, whatever were the shortcomings of the Church in the eighteenth century, her clergy were at least alive to the importance of a proper rotation of crops.

Agricultural Enterprise.

In every department of agriculture a new spirit of energy and enterprise was manifest. Rents rose, but the profits of farmers outstripped the rise. New crops were introduced: swedes, kohl-rabi, prickly comfrey, mangel-wurzel, were readily adopted by a new race of agriculturists. New implements were introduced; Small's plough, Meikle's thrashing-machine economised labour, while patents were taken out, between 1788 and 1816, for reaping, mowing, winnowing, and haymaking machines, as well as for chaff-cutters, scarifiers, turnip-slicers, food-crushers, and other mechanical aids to agriculture. Cattle-shows and ploughing matches were held throughout the country. Farmers' clubs and provincial societies were established. The Bath and West of England Society was founded in 1777, the Highland Society in 1784, the Smithfield Club in 1793. In the latter year the Board of Agriculture was established, with Sir John Sinclair as president and Arthur Young as secretary, and did useful service by diffusing knowledge of the best agricultural practices, as well as by conducting statistical surveys of the farming of the whole country.

The early part of the period under review was one of progress and prosperity. Under the stimulus of high prices new land was brought into cultivation, and to obtain an arable surface no labour or expense was spared. The new system of large landlords, large farms, long leases, and large capital was firmly established, and found in Coke of Holkham its most sagacious and practical champion. His estate-management, farm buildings and cottages were the model of other landlords; his sheep-shearings were meeting-places for practical and theoretical agriculturists, for farmers of every district, and breeders of every kind of stock.

Coke's Improvements. Wheat Growing.

In 1776 Coke came into his estate, with "the King of Denmark as his nearest neighbour." Excluded by his politics from Court and Parliament, he devoted all his energies to farming. He reaped a rich reward. Dr. Rigby, writing in 1816, stated that the rental of the Holkham estate rose from £2,200 in 1776 to £20,000 in 1816. When Coke took his farm in hand he determined that he would grow wheat on the sandy soil, which then yielded only a thin crop of rye, and a bare subsistence for a few milch cows and Norfolk sheep. He marled his land, purchased large quantities of manure, trebled

his live-stock, and in nine years attained his object. A Yorkshire foxhunter in 1772 accidentally discovered the value of bones as manure, and Coke at once realised the importance of the new fertiliser. He also introduced into the country oil-cake

THOMAS COKE OF HOLKHAM, BY T. GAINSBOROUGH, R.A.
(By permission of the Right Hon. the Earl of Leicester.)

and other artificial foods, which, with the addition of turnips, enabled Norfolk farms to carry more live-stock. He set the example of stall-feeding and the grass lands on which our ancestors had fed their beef and mutton were deserted for the Eastern Counties. Without deep drainage heavy rich lands could not compete with the lighter soils under the new system: **Cattle.**

and the older, but inferior, implement was discarded. The Norfolk fairs were crowded with half-fed Galloway Scots, Highlanders, Lowland Scots, and Skye cattle, as well as beasts from less remote districts, which were fattened in the Eastern Counties for the London markets. Thus the Flemish proverb proved true of Coke's farming: *Point de fourrage, point de bestiaux; sans bestiaux, aucun engrais; sans engrais, nulle récolte.*[1] Nowhere in Europe were the grain crops heavier than in the Eastern Counties, because nowhere did the farmer command so abundant a wealth of manure.

Pasture.

Nor did Coke neglect the improvement of pasture. The Society for the Encouragement of Arts, Manufactures and Commerce had, in the middle of the eighteenth century, offered prizes for the cleanest meadows, in which were grown only the best sorts of grasses. Stillingfleet, in 1760, had distinguished the good and worthless herbage by excellent illustrations of the various kinds that were calculated to produce the sweetest hay and richest pasture. Yet Arthur Young, in his "Rural Economy," laments the neglect with which grass lands were treated. Here again the want of deep drainage was severely felt; the wet pastures favoured the growth of the coarsest and rankest vegetation. If land wanted seeding, farmers threw on the ground an indiscriminate collection of seeds, which often contained as much rank weed or coarse grass as nutritious herbage. Coke was the first practical farmer who appreciated the value of distinguishing between the various kinds. To the children of his tenantry he gave simple botanical lessons during May and June, when the grass was in bloom, and employed them to scour the country in search of the best stock of seed. Even as meadows and pastures, the light lands of Norfolk began to beat the undrained grass-lands of other counties, in spite of their natural superiority in richness, out of the market.

Landlord and Tenant.

Convinced of the community of interest that exists between landlord and tenant, Coke encouraged his farmers to put more capital into their land, stimulated their enterprise, and assisted them to take advantage of every new improvement or discovery. By offering leases for twenty-one years he secured to his tenants a return for their outlay, while, by inserting clauses of management, and covenants for the adoption of the Norfolk

[1] "No fodder, no beasts; no beasts, no manure; no manure, no crop."

system of husbandry, he protected his land against impoverishment by excessive cropping. The "Practical Norfolk farmer" (1808) holds up Coke's example as in this respect especially worthy of imitation. "In vain," he says, "are Acts passed for the inclosing heaths and commons, if the old cultivated lands are suffered to remain, by this bar to improvement of having no leases, in a state of semi-cultivation." Though long leases and clauses of management were innovations, Holkham farms commanded the pick of English tenants. Cobbett was no friend to landlords; but even he acknowledged the benefit which

HOLKHAM HALL, NORFOLK.
(*By permission of the Right Hon. the Earl of Leicester.*)

the tenantry derived from Coke's paternal rule. "Every one," he wrote in 1818, "made use of the expressions towards him which affectionate children use towards their parents."

The useful work which Arthur Young had done in disseminating the latest improvements in farming practice has been already noticed. Mr. Coke followed in the same path. The Holkham sheep-shearings did much to break down prejudices and diffuse knowledge, and similar meetings were organised in other parts of the county by such landlords as the Duke of Bedford and Lord Egremont. The Holkham meetings began in 1778, when Mr. Coke, then himself ignorant of farming matters, gathered parties of farmers to his house to aid him with their experience. From that time forward the gatherings were held annually. Dr.

The Holkham Meetings.

Rigby in 1818 describes one of these meetings, when open house was kept for a week, and hundreds of persons assembled from all parts of Europe and America. The mornings were spent in inspecting the farm buildings, the crops and the stock; at three o'clock six hundred persons sat down to dinner, and spent the rest of the day in speeches and toasts

The Fall in Prices.

The close of the Napoleonic War in 1815 terminated the period of agricultural progress and prosperity. It was followed by twenty years of almost unexampled adversity. Contracts of all kinds had been made in the expectation that the inflated prices of the war would continue to prevail. When these fell, landlords and tenants, who had borrowed capital, were confronted with wholesale ruin. Land had sold for exorbitant sums; reckless competition for farms had produced excessive rentals; extravagant standards of living, undue expenditure on buildings, had been the result of inflated prices; heavy mortgages had been charged on estates to meet annuities, legacies and portions, which falls in prices rendered improvident and disproportionate; invaluable pasture, which had been ploughed up in years when wheat rose to 115s. the quarter, was ruined. War prices and the Corn Laws made farming almost a gambling speculation; the wheat area alternately swelled and contracted; violent fluctuations in the purchasing power of money accentuated the depression, which resulted in widespread distress among both landlords and tenants, and aggravated the bitter discontent of the agricultural labourer. The table of the House of Commons groaned under petitions for relief. Select Committees sate to investigate the crisis in 1820, 1821, 1822, 1833, and 1836. The evidence shows that the loss had been enormous. It could scarcely have been otherwise when prices dropped, between January, 1819, and July, 1822, in the following proportions: Wheat (per quarter), from 74s. to 43s.; beef (per stone), from 4s. 6d. to 2s. 5d.; mutton (per stone), from 5s. 8d. to 2s. 2d. To increase the misery, in 1810, 1824, and 1830–1 the rot swept off vast numbers of sheep; in the latter year it is stated that two million perished. Richard Preston, M.P., writing on "The State of the Nation," in 1816, says that some of the best estates of the kingdom were selling at a depreciation of 50 per cent., and that one of the finest grass farms in Somersetshire sold at ten years' purchase. Evidence given before the Select Committee in 1833

shows that landlords had lost nine millions, by reductions alone, on their rentals of previous years; that many farmers had lost all they had, and were working on the road; that in the weald of Kent and Sussex there was not one solvent tenant.

The Yeomanry Disappear.

It was during this disastrous period that the old yeomanry practically disappeared. More substantial than the open-field farmers or cottagers, they had maintained the struggle for existence with more tenacity. The evidence of the Agricultural Commission of 1833 proves that they still existed in almost

REAPING MACHINE INVENTED BY JAMES SMITH OF DEANSTON.
(*Farmer's Magazine*," *Edinburgh*, 1816.)

every county; but their numbers had greatly diminished. The causes of their disappearance are not difficult to discover.

Lambard, in his "Perambulation of Kent" (1576), says:—

"A man may find sundry yeomen (although otherwise for wealth comparable with many of the gentler sort) that will not yet for all that change their condition, nor desire to be apparayled with the title of Gentrie."

More than a century later the *Spectator* thus describes a member of the same class:—

"He is a yeoman of about one hundred pounds a year, an honest man; he is put within the Game Act, and qualified to kill a hare or a pheasant: he knocks down a dinner with his gun once or twice a week, and by that means lives much cheaper than those who have not so good an estate as himself. He would be a good neighbour if he did not destroy so many partridges; in short, he is a very sensible man, shoots flying, and has been several times foreman of the petty jury."

Towards the close of the eighteenth century men of this class were still prosperous. In Hampshire, Vancouver (1813) says that there were many farmers who were also "possessors of small estates which their thrifty management keep upon the increase." In Kent, Boys (1793) says that "the number of the yeomanry of this county seems annually on the increase. There is no description of persons who can afford to give so much money for the purchase of an estate as those who buy for their own occupation. Many estates in the eastern part of the county have been so sold, within these few years, for forty, and some for fifty, years' purchase, and upwards." In Essex (1807) land was bought up by the farmers, so that "there is a prospect of the tenure of land returning to the conditions of the seventeenth century, when the county was filled with small gentry residing upon their estates." In Berkshire (1813), Mavor reports that one-third of the soil was cultivated by the owners themselves in small estates. In Norfolk (1804) there was said to be an increasing number of small estates. In Suffolk (1794) numerous yeomen flourished, cultivating estates of value rising from a hundred to four hundred pounds a year.

Similar evidence might be gathered from other counties to show that the yeomanry had weathered the storm of enclosures. But during the French war a very large number had consulted their pecuniary interests by selling their estates at the fancy prices which then prevailed. Those who retained their properties too often mortgaged their land to make provision for their children, to increase or improve their estate, or to erect farm buildings. When prices fell after the peace, the debt remained. The struggle was brief. Their farming deteriorated, their buildings fell out of repair, and finally their estates were sold. The new purchasers were not small capitalists, but neighbouring landlords, or successful merchants. In Yorkshire, for example, if one small freeholder went, his place, in former years, was taken by another; after 1820 this ceased to be the case. In Kent and Sussex, again, many freeholders retained their land by vigorous economy and by wholly ceasing to employ labour; but all who had mortgages or annuities to pay were forced to sell.

The Effect on Agriculture.

The change is on social grounds deplorable enough; but, at the time, both economically and commercially, the nation

gained. Without capitalist landlords, agriculture could not have recovered from the prolonged misery of 1818–36, and its rapid revival was due to the new conditions of British landownership, which the nineteenth century saw firmly established and daily becoming the almost universal system.

J. E. SYMES. The Social Economy.

THE war had severely strained national resources. Probably one out of every six adult males served in the army, navy, or militia, yet the exhaustion of men was perhaps less felt than the exhaustion of wealth. In 1778, Hume, the acutest of living observers, thought that the size of the National Debt threatened the very existence of the nation. Since then the debt had more than trebled. In 1792 it was less than two hundred and forty millions. In 1815 it exceeded eight hundred and sixty millions.

Effects of the Industrial Revolution.

There can be no doubt that it was the Industrial Revolution (Vol. V., p. 816 *seq.*) that enabled our country to bear the great burden of the war. Under its influence England had ceased to be a mainly agricultural nation, and big towns with factories and workshops had suddenly sprung up. Manchester had already 140,000 people; Birmingham 80,000; Sheffield and Leeds each about 50,000. These numbers do not sound very impressive to us; but we must remember that only a century earlier Manchester was scarcely more than a village, with only 12,000 inhabitants. The total population of England and Wales had risen, in spite of the war, from eight and a half millions in 1790 to about eleven millions in 1815, and the nation's wealth had increased even more rapidly. The wage-earning classes had, however, gained little advantage from this increase. Their wages had seldom risen proportionally to the prices which they had to pay for the necessaries of life. The new wealth which the manufacturing industries were creating provided a fund from which the expenses of the war were defrayed. It was those classes that had profited by the industrial revolution who advanced the successive loans; though the masses had to bear a large share of the burden of paying the interest on these loans. They escaped, indeed, the income tax, which had now risen to two shillings in the pound; but indirect taxes were imposed on many of the necessaries of life. Bread, boots, and salt may be taken as specimens of the things that were taxed.

Social Conditions in 1815.

The Landed Interest.

The most prosperous class, at the close of the war, was what was described as "the landed interest." Every improvement in manufacture had tended to raise rents. Every increase in population had operated in the same direction, while the war had helped to keep up the price of food. The farmers shared in the landlord's prosperity. Their rents were seldom raised to the full amount of the increased value of the land, and when they held their farms on lease, they were able to gain the whole increment, till such time as the lease expired. They were naturally disposed to support a war which kept up agricultural prices, and protected them from foreign competition.

Employers.

The large manufacturers were also fairly prosperous. The war was a heavy burden on them, but the Industrial Revolution enabled them, in many cases, to build up considerable fortunes, by availing themselves of division of labour, and other advantages of production on a large scale. The gradual introduction of steam power, and other improvements in cotton and wool spinning, more especially the introduction of the power-loom (p. 97), gave great advantages to those who were shrewd enough to avail themselves of these discoveries, and who possessed, at the same time, exceptional ability for the organisation of labour.

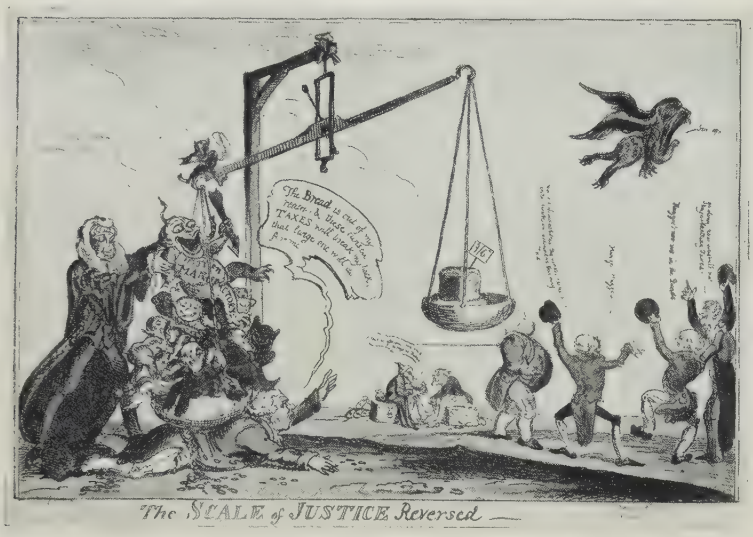
Employed.

Thus, landlords, farmers, and large manufacturers were prosperous, but the bulk of the people suffered greatly during the war. In 1801 we find cotton spinners working seventy-four hours a week for thirty-two shillings and sixpence, which, at the then existing prices, was a miserable pittance. The quartern loaf cost one and tenpence, and butter was two shillings a pound. Many were driven to substitute shell-fish for meat. Some ate nettles and weeds, often without salt, for salt was taxed fifteen shillings a bushel. Nevertheless, as long as the war lasted, popular discontent was partly kept in check by patriotic feelings and by the hope of better days when peace was restored. Reviews, illuminations in celebration of victories, the public funerals of soldiers, and the thanksgiving services in the churches, helped to keep up enthusiasm, and to restrain dissatisfaction.

Condition of the People, 1815-1821.

At length came the long-expected peace, but it brought in its train little or no alleviation of the general misery. In fact, from the almost universal complaints of bad trade and lack of employment, we should gather that the early years of the peace actually aggravated the sufferings of the masses. Some

allowance must, no doubt, be made for a natural reaction. The cessation of war had been so hopefully looked forward to, that, if it brought no alleviation of poverty, it was almost certain that people would think and say that things were actually worse. Nevertheless, after due allowance for this, the balance of evidence seems to show that the country suffered more during the years 1815–21 than during the war.


The Bread is out of my mouth, A Usher reads the TAXES will break my back, that I cage no more for me
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The SCALE of JUSTICE Reversed

THE SCALES OF JUSTICE REVERSED.
(*From a caricature by George Cruikshank.*)

The Unemployed.

Various explanations have been given of this state of things. It is evident that the restoration of peace cut off the demand for certain kinds of labour. The need of soldiers and sailors, and of all the industries that minister to war, was of course much diminished. No doubt the demand for unproductive labour does, in the long run, impoverish a nation. If men are withdrawn from manufacture and agriculture, and employed in taking other men's lives, the resources of the nation are diminished, but this loss may mainly fall on the well-to-do classes, especially if, as in this case, the expenditure is largely met by loans. At the declaration of peace a number of men were suddenly thrown on the labour market who could only gradually be absorbed in productive work, especially as the

nation had been depleted of capital by the war, and had besides to meet the interest on the heavy debt it had incurred. A great and sudden change in the character of the demand for labour is generally for a time injurious, even where it is in the long run beneficial.

The injury done to the landed interest by the increased importation of foreign produce and the fall of prices is another illustration of the same fact. Consumers profited by the change, and gradually part of the labour and capital that would otherwise have been devoted to agriculture was directed towards the supplying of manufactured comforts and luxuries; but for some years the injury done to agriculture probably considerably overbalanced the advantages gained by the consumers (p. 112). The Corn Law of 1815 (p. 2) was afterwards modified, but even after modification it was most disastrous to England. Nevertheless, it is open to doubt whether, in the critical early years of the peace, it did not prevent more injury than it caused.

Foreign Trade.

The manufacturing class might have been expected to reap the greatest and most immediate harvest from the peace, and, as a matter of fact, we find that in 1815 their exports rose in value from forty-five to fifty-one millions; but it was soon seen that English manufacturers and merchants had over-estimated the foreign demand. The Continent was (even more than England) impoverished by the great war, and in many cases there proved to be no customers, at remunerative prices, for British goods. In Holland, for instance, our exports were actually sold at lower prices than they would have fetched in London. The protective policy of the Legislature aggravated the evil. In the long run exports are mainly paid for by imports, but the British Government deliberately hindered importation by heavy customs duties. The only branch of our trade that flourished during these years was that with America, largely because there were no protective duties against American cotton. The quantity of this commodity imported[1] rose from eighty-six million pounds weight in 1816 to one hundred and sixteen millions in 1817, and one hundred and sixty-two millions in 1818, while in 1831 it was upwards of two hundred and fifty-seven million pounds; and, as was natural, our export trade to America similarly increased.

[1 After allowing for the quantities re-exported to foreign countries. Baines, *History of the County Palatine of Lancashire*, Vol. II., p. 496.]

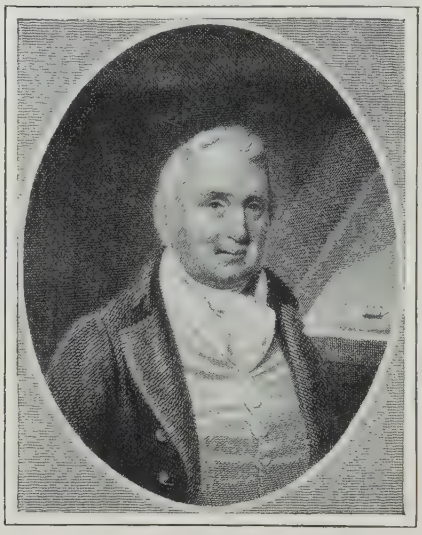
The Disorganisation of Labour.

Another cause of the misery of the masses during the early years of the peace was the lack of organisation. The medieval and post-medieval organisations of labour had broken down under the industrial revolution (Vol. V., p. 816 *seq.*). The age of Factory Acts, and similar legislative organisations, had not yet begun, and trade unionism was still in its infancy. Till the eighteenth century an artisan, if he were a man of skill and industry, rose in time to be a master workman. There was no permanent combination of operatives for the purpose of improving and regulating the condition of their employment. Gradually, however, there grew up a class of skilled workmen who were practically certain to remain workmen all their lives. Improvements in machinery and the rapidly growing employment of steam power made the possession of capital almost indispensable for the employing class. In other words, in many trades the workers found themselves cut off from the hope of ever becoming employers or directors of industry. Hence it was that the eighteenth century saw the rise of enduring combinations of the employed. The ruling classes watched the movement with suspicion, and in 1799 and 1800 Acts were passed definitely forbidding trade combinations. The theory still survived that wages should be fixed, not by individuals, nor by collective bargaining, but by the intervention of the justices. But with the growing complexity of industry, this was becoming more and more impracticable, and the spread of the doctrines of Adam Smith tended to discredit the idea of State interference with labour. As early as 1808 a Committee of Parliament reported that a proposal to fix a minimum wage "was inadmissible in principle . . . and if practicable, would be productive of the most fatal consequences"; and in 1813 the law empowering justices to fix the rate of wages was formally repealed, and the other remnants of medieval organisation were swept away in the following years. Thus workmen were told in effect that the State would not help them, and that they might not combine to help themselves. They naturally resorted to violence and riots. The bad harvest of 1816 was followed by much destruction of machinery, burning of hayricks, plundering of shops, and other disorderly proceedings, which only tended in the long run to increase the general distress.

This was clearly perceived by the more intelligent of those

Radical Reformers.

who regarded the poor as wronged and oppressed. Foremost amongst these was William Cobbett, whose *Weekly Political Register*, originally published at a shilling and a halfpenny, began in 1816 to appear at twopence. This may be regarded as the beginning of the modern cheap Press (p. 43). Cobbett achieved the great result of convincing the more thoughtful of the working classes that the root of the evils from which they were suffering was planted in misgovernment, and that their remedy was to be found, not in rioting and machine-breaking, but in sound legislation, for which the way must be prepared by Parliamentary reform. So great was his success that, when the national distress was at its worst, violence almost ceased and a peaceful agitation took its place. "Hampden Clubs" began to be founded in many parts of the country. Working men orators and working men poets began to appear, calling on their comrades to organise themselves, and to demand annual Parliaments and universal suffrage. Sir Francis Burdett, Member for Westminster, was chairman of the London Hampden Club, and was supported by Lord Cochrane, and several of the upper and middle classes.



WILLIAM COBBETT.
(*From an old engraving.*)

Socialistic Reformers.

There were also some organisations of a more advanced type. A Yorkshire schoolmaster, named Spence, had some years previously propounded the theory of the nationalisation of land as the true cure for poverty, and in 1816 this theory was taken up by a band of persons who called themselves the Spencean philanthropists. Some of them were pronounced Socialists, and in favour of resorting to physical force (p. 2). The Government employed spies to encourage violent proposals, and then to give

evidence against those who embraced them, but on the whole, the agitation, like that of Cobbett, was of a peaceful character, and the patience with which the poor endured their misery was remarkable.

The social evils were undoubtedly aggravated by the Poor Laws, which encouraged improvidence, kept down wages, and wasted large sums of public money. This subject, however, must be reserved till a later chapter (p. 300). **The Old Poor Laws.**

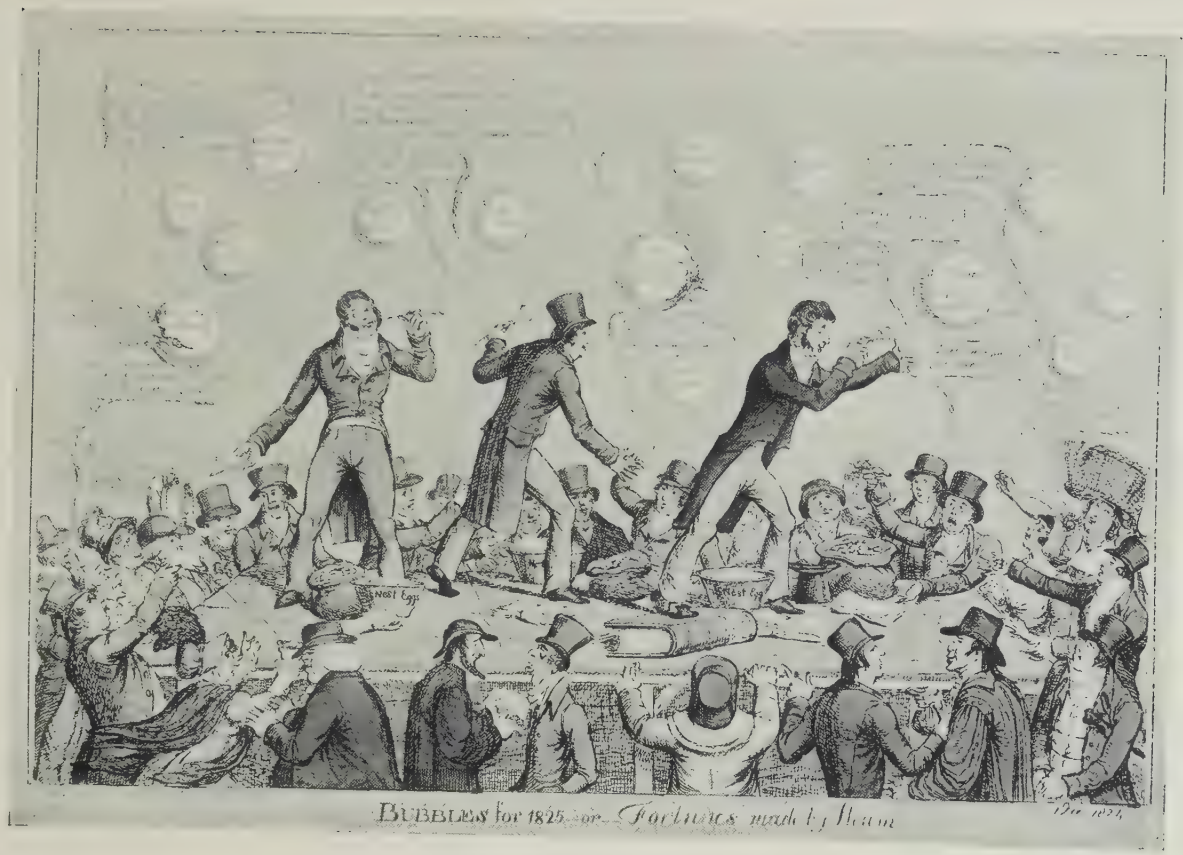
The last cause we shall mention of the misery of the early years of the Peace is the contraction of the currency, and the consequent fall of prices. Since 1797 the Bank of England notes had been inconvertible, and since 1808 they had been issued to such an amount as to put gold at a premium. By 1817 the premium had so fallen that the Bank undertook to redeem a portion of their smaller notes at par. Later on in the same year the offer was extended, but the Bank found much difficulty in meeting its engagements. Parliament, therefore, interfered, and fixed rates at which all notes must be convertible, at a gradually reduced premium, until May 1st, 1823. After that date all notes were to be convertible into gold at their full value. The Bank did not, however, avail itself of the full delay allowed by Parliament; and from May, 1821, there were practically no more inconvertible notes in circulation. This gradual restriction of the currency naturally lowered prices, and the fall was further hastened by the outbreak of revolutions in Spanish America (p. 6), and the consequent interruption of silver mining. The further fall in prices which ensued checked the development of industry, lowered profits and wages, and increased the numbers of the unemployed. **Currency Contraction.**

Nevertheless, the return to cash payments tended, in the long run, to restore confidence and credit. Accordingly, from about 1822, there began to be distinct evidences of an improvement in trade. The financial policy of the Liverpool Cabinet was at this time largely directed by Mr. Huskisson, who took advantage of the growing prosperity to introduce a number of changes in the direction of Free Trade. In June, 1823, the Navigation Laws were practically repealed, in the case of all foreign nations that were willing similarly to remove restrictions on trade done by British vessels. Our shipowners said they would certainly be ruined, but in twenty years the English merchant navy was increased in tonnage by over forty per cent. Huskisson next **Better Times, 1822-1824.**

proceeded to relieve the important wool and silk industries from a large part of the protective duties by which they were hampered. The tax on imported raw silk was almost abolished, that on spun silk was about halved, and even that on manufactured silk was reduced. British silk manufacturers believed that they could not hold their own against the French without more protection, but the event proved that they were soon able to sell silk goods in the French markets. The woollen trade was similarly relieved. Hitherto our manufactures were hampered by import duties, and our agriculturists by export duties on raw wool. Both trades were now set free, and both gained much by the change.

Crash of 1825.

It is possible that Huskisson was moving even too fast. The stimulus given to trade by his bold policy was supplemented by the opening of South American and Mexican markets. The rebellious Spanish Colonies had attained their independence, and mining operations were renewed. A period of over-speculation ensued. A number of joint stock companies were formed, many of them by dishonest persons anxious to reap the fruits of the exaggerated hopes of a speedy fortune to be made in commercial undertakings. The Bank of England, as well as the private banks, were too much inclined to avail themselves of the alacrity of the public to take their paper. Sharing in the general confidence, they showed an undue readiness to give credit. There followed that sort of crash with which later experience has familiarised us. Bubble companies burst, credit contracted, everyone began to call in his money, or to refuse to part with it. Rash speculators, as well as those who had been only unfortunate, or somewhat too sanguine, were ruined; and many legitimate companies and honourable individuals were dragged down by the reaction from excessive confidence to equally excessive caution. In six weeks more than sixty banks stopped payment. The Government did its best to check the panic. The Mint worked hard to replace the metallic currency, which had been driven out of circulation by the excessive issue of bank-notes. The restriction under which private banks had been limited to six partners, thereby limiting the solvency of the banks, was abolished. The directors were persuaded to lend freely where the security was good, and the issue of one pound and two pound notes was forbidden from the idea that small notes are especially likely to be over-issued.



FORTUNES MADE BY STEAM, 1825.

(*From a contemporary satirical print.*)

Depression, 1826–1832.

All these measures, with the doubtful exception of the last, were wise and timely, but they could not prevent great and widespread suffering. The contraction of credit compelled a contraction of business, which threw thousands of the working classes out of employment. Once more there was an outbreak of rioting and machine breaking. The distress was so severe that Huskisson actually succeeded in persuading his Tory colleagues to modify the Corn Laws. Already, in 1822, a slight change had been introduced in the form of a sliding scale. The scale was now altered. When the price of wheat was as low as fifty shillings a quarter the duty on it was to be thirty-six and eightpence, but as the price rose the duty was to fall. When the price reached sixty-eight shillings the duty was to be sixteen shillings and eightpence. When it reached seventy-three shillings the duty was to be only one shilling.

Gradually trade began to recover, and indeed there were forces at work tending to enrich the nation, which could hardly fail to balance in the long run evils due to mere credit fluctuations. Foremost among these was the introduction of railways (p. 273 *seq.*), by which an immense demand for labour and capital was created, and industry thus helped to recover from the panic of 1825, and the subsequent depression.

Railways.

Trade Unions.

Meanwhile the law against trade combinations had been first repealed, and then very partially restored. The movement for the repeal was directed with great skill by Francis Place, a man who began life as a journeyman breeches-maker.[1] In 1818 he started a newspaper, in which he pleaded for the right of combination with so much ability as to enlist the advocacy of Joseph Hume and J. R. McCulloch, then editor of the *Scotsman*. Chiefly through Hume's advocacy, a committee of inquiry was appointed by the House of Commons in 1824. Place organised the evidence so effectually that a Bill was passed repealing all laws against combination. The result was a series of strikes, which so alarmed the ruling classes that Parliament again declared combination to be illegal, but an exception was made in favour of associations for dealing with questions of wages and the hours of labour. This was in effect a great victory for the workmen. It must be attributed partly to the spread of the doctrines taught by Adam Smith, which

[1] His life has been written by Graham Wallas (1898).]

implied a certain freedom of combination. Huskisson, Peel, and others of the younger Tories had accepted this part of the orthodox political economy, and held firm to it against tremendous pressure from the employing class. A formidable agitation and fears of a revolution no doubt helped the Ministry, and the fact that Parliament was essentially a body of landowners, and that the capitalist employers were comparatively weak in it, was, of course, very conducive to a fair hearing of the case of the unemployed. The victory, however, was only partial, for the somewhat ambiguous prohibitions of molestation and of obstruction were certain to be rigidly enforced against trade unionists. The years immediately following the Bill were years of trade depression (1826–30). Unions multiplied, but were generally defeated in their attempts to prevent reductions in wages; and the more thoughtful of the working men began to rest their hopes rather on radical and socialistic reforms than on the efficacy of strikes and trade organisations. The new unionism of 1829 to 1842 was based on the belief that there ought to be a national confederation of workers, and not merely separate unions for the different trades. In December, 1829, "The Grand General Union of the United Kingdom" was formed. It was to be open to all male workers at a subscription of a penny a week. This union soon fell to pieces, but a few months later a fresh society was formed by delegates from twenty organised trades. It was called "The

FRANCIS PLACE, BY DANIEL MACLISE, R.A.
("*Fraser's Magazine*," 1836.)

National Association for the Protection of Labour," and its aim was to prevent reductions, but not directly to promote advances of wages. Unionists had yet to learn that strikes against reductions are less likely to be successful than strikes for advances. They naturally disliked the former more than they liked the latter, but, as reductions usually come with a contraction in trade, a policy of mere general resistance to reductions is not likely to be successful. However, the National Association was for a time fairly flourishing. It obtained large funds, and in 1831 it started a paper of its own—*The Voice of the People.*

The Reform Movement.

The efforts of the trade unionists to organise combinations either of separate trades, or of a more general character, were, however, less in evidence than the agitation for an extension of the suffrage and a redistribution of seats. Throughout this period there were two distinct movements, one aiming at an improvement in the condition of the poor by legislative changes, the other attaching most importance to voluntary combinations and organisations. As early as 1819 a great reform meeting at Manchester was dispersed by force (the Peterloo Massacre, p. 3). The subject was then taken up by the Whigs in Parliament, and the outside agitation was to some extent quieted; but after 1823, when the Parliamentary movement languished, the country began to show unmistakable signs of a genuine demand for manhood suffrage, equal electoral divisions, annual parliaments, and the ballot. Meanwhile the middle classes were becoming more and more determined on changes far less sweeping than these, but almost equally hateful to the aristocracy. The death of George IV. gave them their opportunity, and the Radicals showed more readiness than might have been expected to support the more moderate reformers. By means of enthusiastic meetings, and ultimately by riots, they supplied the democratic

DOUBLE SOVEREIGN OF GEORGE IV.

44 THE MASSACRE OF PETERLOO, OR BRITONS STRIKE HOME, BY GEORGE CRUIKSHANK.

pressure that helped to ensure victory to the great middle class.

General Results, 1815–1832.

On the whole, then, this period was a period of distinct, though slow, progress. The population of the United Kingdom rose from about eighteen to about twenty-four millions. National wealth increased even more rapidly. In money value the increase is estimated at fifty per cent.; but if the fall in prices be allowed for, we cannot put the actual increase of wealth, measured in commodities, at less than eighty per cent. The burden of taxation was also much diminished, and the annual national expenditure had fallen from one hundred to fifty-two million pounds. There was, however, little increase in wages. The improvement was mainly among the well-to-do. The evils of the factory system (p. 298 *seq.*) were at their worst. Labour was still almost unorganised. There was no system of national education, and the overworked children were almost without instruction. On the other hand, the working classes had gained much knowledge and experience, especially through their failures, and were soon to secure for themselves improved conditions of labour.

LION SHILLING OF GEORGE IV.

"JOEY" GROAT OF WILLIAM IV.

MARY BATESON. Social Life.

As the lives of Queen Charlotte and of George III. drew to a close, men began to fear lest a crop of social evils should spring from the example set by the Prince-Regent and his wife. Sir Walter Scott writes in 1818: "If we should suppose the Princess of Wales to have been at the head of the matronage of the land for these last ten years, what would have been the difference on public opinion! . . . . . Honest old Evelyn's account of Charles II.'s court presses on one's recollection." But if George IV. with his eighteen mistresses—five historic,

eleven named, two unnamed—could compete with Charles II. in wantonness, in social talent he could not do so; nor, even had his gifts been greater, could he have rivalled Charles II.'s influence, for social conditions were changed. The personal influence of the sovereign was never stronger than in the reign of Charles II., never weaker than in the reigns of George IV. and his brother.

QUEEN CAROLINE'S MATRIMONIAL LADDER.

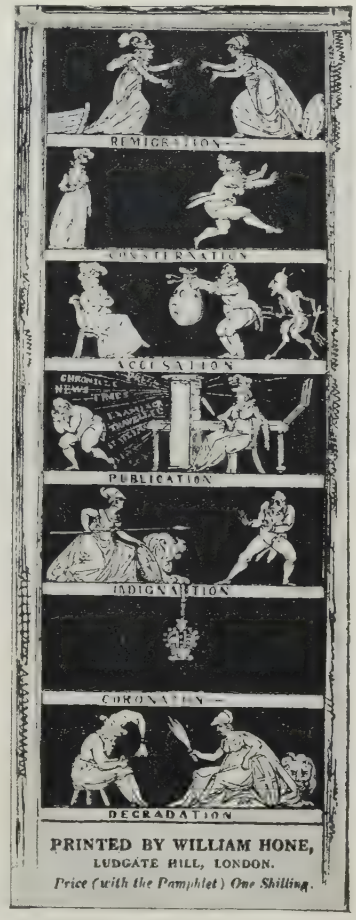
(*By George Cruikshank.*)

The Prince Regent did not exercise any paramount authority even on the subject of dress, for there his friend Beau Brummel was supreme dictator as president of the Council of Taste, and the Regent himself wept when the Beau disapproved of the cut of his coat. When the Beau's influence was removed, George IV. showed himself unwilling to succumb to a new fashion till it had been firmly established in his despite. In 1816 Weston, in Old Bond Street, had the best cut for the long-tailed and short-waisted coat, which for morning and evening dress alike was generally blue. Pantaloons were close-fitting and made of stockinette; they stopped some inches short of the ankle, showing black silk stockings and pumps. About 1830 pantaloons were superseded by long black trousers, held in place by silk straps under the foot. Only at court, at the opera, and at Almack's balls, knee-breeches and "chapeau bras" were still etiquette.

Men's Dress.

When Lord Barrymore, a leader of fashion put his hat on a chair, George remarked, "A well-bred man places his hat under his arm on entering a room, and on his head when out of doors." In 1824 the tails of the coat were shorter, and the frock coat made its appearance. Brass buttons went out, but the button-holes were now heavily frogged, while a black stock was worn instead of a white stock or cravat with a cauliflower frill.

Till the middle of the period women's walking and evening dresses were still made of light materials in all seasons, and when cloth dresses began to be worn indoors, grave dangers to health were anticipated. Instead of the long, plain, clinging skirts, petticoats were made short, wide, and over-trimmed. The characteristic garment of the period was the pelisse. In 1819 the mourning for Queen Charlotte was black crape over a white satin slip, black cloth pelisse lined with white sarcenet and trimmed with white silk cord, a bonnet of black Leghorn trimmed with blond and satin. By 1820 the waist was in its natural position, and the bodice and sleeve, which in the classical period almost vanished, began to grow wider and wider; indeed the "gigot" sleeves in 1827 were as big as those of 1894, and the width from shoulder to shoulder was increased by the pelerine. In 1815 the small beehive bonnet was worn, but in 1827 bonnets were as big as umbrellas. At that time it



QUEEN CAROLINE'S MATRIMONIAL LADDER.

(*By George Cruikshank.*)

Women's Dress.

was fashionable for ladies to carry real flowers. The style of hair-dressing was not becoming to many faces, for the hair was drawn up tightly and dressed high; curls or "poufs" were arranged *à la Chinoise* on each side of the parting, or on the left side only, while ribbon loops were woven in among them, and plumes of marabout flowers, or combs stood above erect; in 1830 the high tortoiseshell comb *à la giraffe* was in vogue. The abolition of the crinoline from Court, where it had held its own throughout the classical period of fashionable dress, was due to George IV.'s decree.

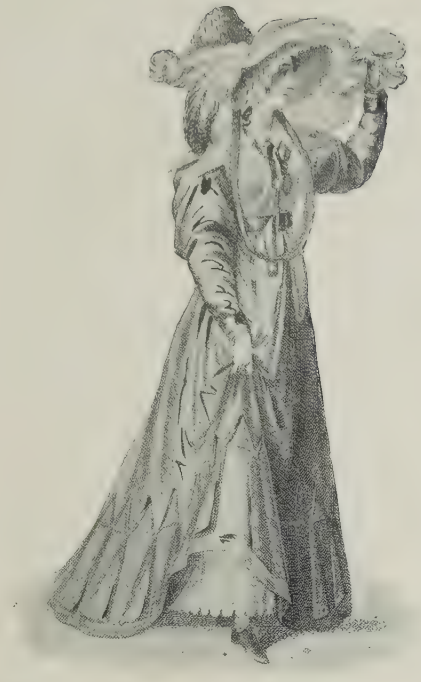
EVENING DRESS, 1825.
("*Repository of Arts*," *Vol. VI.*)

George IV. can also claim to have conferred a benefit upon his country when he naturalised the *suprême de volaille*, and other inventions of French cookery. His influence upon the table of the upper classes was not

Food.

due only to example, for he put his most famous cooks to national uses. A number of club men were dining with him when he was Regent, and he asked them about their dinners. They one and all complained of the eternal joints, beef-steaks, boiled fowls with oyster sauce, and apple tarts; wherefore, taking compassion upon them, George prevailed upon his cook Wattier to start a club. This ultimately failed by reason of the high play at macao, but another of his cooks, Ude, undertook the cuisine of Crockford's Club, made it famous, and was succeeded by Francatelli. Gronow describes his dinners as "wonderfully solid, hot, and

MORNING DRESS, 1819.
("*Repository of Arts*," *Vol. VIII.*)



PROMENADE DRESS, GIGOT SLEEVES, 1827.
("*Repository of Arts,*" *Vol. X.*)

WALKING DRESS, PELISSE, 1822.
("*Repository of Arts,*" *Vol. XIII.*)

WALKING DRESS, 1819.
("*Repository of Arts,*" *Vol. VIII.*)

stimulating." Mulligatawny and turtle soups were served, with salmon at one end of the table and turbot with smelts round it at the other; then saddle of mutton or roast beef, and fowls, tongue and ham "succeeded as regularly as darkness after day." Four side-dishes, flanks, and removes were required, and the entrées would be placed in duplicates at opposite corners. But the French side-dishes were there, Gronow says, for appearance sake only, and went away neglected because they were not well cooked. The wines were sherry, champagne, and port, and after soup everyone began taking wine with everybody else till the end of dinner. Dr. Kitchener, the author of the popular "Cook's Oracle," recommends the host to fill the plates and send them round, and not to ask each guest if he will take soup or fish, or what particular part he prefers, since all cannot be choosers.

Clubs.

Clubs of the new model are said to have been invented by the officers retired on half-pay after the peace, who regretted the loss of mess dinners, and to supply their place opened the United Service Club in 1819. In the new clubs all the members were co-proprietors, not mere subscribers. The old clubs, which had originally been coffee-houses, were called subscription clubs for distinction's sake; they were run each by a single proprietor, who made his profits out of the subscriptions and the hazard table. At the new clubs, with an average entrance fee of twenty guineas, and subscription of ten guineas a year, it was possible to provide the members with the comforts of a magnificent hotel, eating-house, café, reading-room and library. H. Crabb Robinson's opinion of the newly created Athenæum, 1823, was that "it is a genteel establishment, but I foresee it will not answer my purpose as a dining-place."

Tone of Society.

The new clubs were more utilitarian and less exclusive than of old, when surgeons, architects, and attorneys could find no admission. But exclusiveness was still the golden rule of society in London. The test of membership of the fashionable world was a ticket of admission to Almack's. The lady patronesses who held the keys of this seventh heaven were known to be inflexible. Admission to the opera also was by ticket, requiring the voucher of a lady patroness.

In 1842 Raikes writes that the change in society is very apparent—

"It was called, and perhaps justly in my time, dissipated; but the leaders were men of sense and talent, with polished manners, and generally high-minded feelings. The young men of the present day seem without any prominent feature of character, indifferent instead of fastidious, careless in their manner to the women, and making it the right thing to *afficher* a heartless, selfish tone of feeling, such as would not be tolerated in French society, where the women certainly maintain a social influence that is not to be observed here."

He finds no respect for social conventions in London drawing-rooms, in dress, manner, or language. "Steam has here dissolved the exclusive system and seems to have substituted the love of wealth for both the love of amusement and of social distinction." Raikes's view is perhaps unduly gloomy. Had he been writing in 1820 he would probably have found as little to praise. Like Gronow, he would have told us that the dandies were "not high-born, nor rich, nor very good-looking, nor clever, nor agreeable, but generally middle-aged men, with large appetites, who sat in White's bay-window, swore a good deal, never laughed, had their own particular slang, looked hazy after dinner, and had most of them been patronised by the Prince Regent or Beau Brummel." But the Prince Regent did not produce them, nor did steam abolish them; they are with us still.

The women, Gronow says, were more beautiful, better bred, and more distinguished in appearance, and above all in manner, than they are nowadays (1860). "How grand they used to look with their tall, stately forms, small thoroughbred heads, and long flowing ringlets." There were none of the fast girls, such as Gronow saw in 1862; he grieved to find that the ideal was something between the dashing London horse-breaker and some Parisian dramatic artist, and that a jaunty, devil-may-care look was accounted the thing. It was probably the crinoline that made women appear short to Gronow's eyes, and it is hard to believe that in that demure and matronly attire the girls of 1862 were addicted to betting and slang.

Literary Lions.

Literary distinction in either sex met with ample social reward. George IV., with his usual affection for the example of Charles II., cultivated the society of wits, and admitted even the journalist Theodore Hook to his table, because of his fame as a jester. In fact, it needed the wits to make the long sittings over the dinner-table bearable. More purposeless was the rage for literary and scientific lions. Harriet Martineau gives an

amusing account of lionism in 1830, of the measures a hostess must take to draw out a literary lady, of the girls begging each for just one line in her album. At her own soirées Miss Martineau would have no crowd of admirers round a gentleman haranguing on the sofa which he keeps all to himself, and "no literary flirtations in the style of half a century ago." She mocks at Lady Mary Shepherd for saying, "Come now, let us have a little discussion about space." The most successful "salons" were those of Lady Blessington, of the Dowager Countess of Cork, and of Lady Holland. Lady Blessington at Seamore Place, and afterwards at Gore House, Kensington, gathered about her a host of authors, booksellers, publishers, and journalists whom she got to contribute to her Book of Beauty, the Keepsake, Flowers of Loveliness, and other literary efforts of her editing, but her parties were not for men's wives.[1] Lady Holland's "omnium-gatherums" were more cosmopolitan and more political in tone. Between 1799 and 1840 there was scarce an Englishman of any distinction in politics, science, or literature who had not been a guest at Holland House. Oddly enough, in 1831 the meal for the poets was declared to be breakfast, for Rogers and Moore shone at this prosaic hour; Macaulay could be relied on at all hours. Even at breakfasts Moore could be coaxed to sing his Irish melodies, unaccompanied, for it was a time when unaccompanied singing was a fashionable accomplishment, as harps were too cumbrous to carry, and not every house had a piano. At this time, too, literary and scientific interests were the rage, and society crowded to the meetings of the British Association, and passed the hours away in lecture-rooms, hearing Carlyle at Willis's Rooms, or Faraday at the Royal Institution.

Dances. The fashionable dances of the period were the waltz, introduced in 1813 by Madame de Lieven; the quadrille, brought from Paris by Lady Jersey after the Peace; Lancers, a variation of the quadrille, introduced about 1820; the "sprightly galoppade," and after 1830 the polka.

London. Between 1831 and 1881 the population of London increased from an average of 22 to an average of 51 per acre. The districts in which the growth has been most remarkable are:—

[1 *Cf.* J. F. Molloy, *The Most Gorgeous Lady Blessington*, 1896. For Lady Holland, *cf.* Trevelyan, *Life of Macaulay*, I., and the *Greville Memoirs*.]

District.	Population per acre 1831.	Population per acre 1881.
Bromley-by-Bow	9	106
Paddington	12	86
Kensington	9	74
Fulham	4	56
Camberwell	6	42
Hampstead	3	20

Bow, Stratford, Bromley, Clapham, Tottenham, Canonbury were still villages in 1831, while Brixton, Kilburn, Chalk Farm, Kentish Town formed no part of continuous London. Islington had but

LITERARY LADIES, BY DANIEL MACLISE, R.A.
("*Fraser's Magazine*," 1836.)

one street; Westbourne Grove, Notting Hill, Campden Hill, Earl's Court, were country districts. The Bayswater Road and Tyburnia had lately become fashionable building sites now that criminals were no longer hanged at Cumberland Gate. In 1820 Moorfields and Spafields still had some green acres; Woburn, Tavistock, and Gordon Squares were laid out in market gardens. Among the improvements of the reign was Regent Street with the Quadrant and Waterloo Place, planned by Nash to connect Carlton House and Pall Mall with the new house which the Regent proposed to build for himself overlooking Regent's Park. The Whigs, who were horrified at all George's extravagant

building schemes, vowed that they would never desert Bond Street to walk under the covered arcade of the Quadrant, which was supported by 140 cast-iron pillars, the object of much indignation.[1] It was the age of stucco building, and George IV. fell in with the prevailing taste. "He finds London brick and he leaves it all plaster." But the democratic party ought to have been pleased at the changes in Hyde Park, where the brick wall, which shut it in all the way to Kensington, was removed,

REGENT STREET, WITH THE QUADRANT COLONNADE
(*Shepherd and Elwes, "Metropolitan Improvements in London in the Nineteenth Century,"* 1829.)

and iron railings were substituted. Following the example of Charles II., George IV. interested himself in the parks; in 1827–29 St. James's Park was relaid, and his own Regent's Park was the wonder and delight of his time. The Zoological Gardens were opened in 1828, and among the chief national undertakings were the National Gallery, 1824, and the adaptation of Montagu House to the needs of the British Museum, which acquired George III.'s library in 1821. At the Covent Garden pantomime a possible Thames Embankment was shown as a panorama, "a pleasing anticipation of a splendid dream, which not even in this projecting age can become a reality." It had been talked of in 1666 by Sir Christopher Wren, but it was not made till 1870. The new London Bridge, planned by

[1] The arcade was removed in 1848.

WEST LONDON IN 1832.

(*From a contemporary map.*)

Rennie in 1823, was opened in 1831; Waterloo Bridge in 1817. Improved markets were laid out; Covent Garden fruit and flower market was built 1829–30; Fleet Market was moved in 1829, and the old Fleet Market became Farringdon Street; Hungerford Market, now the site of Charing Cross Station, was rebuilt in 1830. In 1833 £100,000 was spent by a private speculator on Islington Market, but the Smithfield live-stock market remained in a bad state till it was removed in 1855 to Copenhagen Fields.[1]

Public Carriages.

Many rich merchants still lived at their places of business in the City, but many were already building houses far distant from business, and a system of stage carriages was in use for those who lived in the suburbs. By 1837 there were licensed 400 omnibuses, 1,200 cabriolets, and 600 hackneys, instead of the 1,300 hackneys which in 1815 were the only public conveyances. The omnibus was noticed by Crabb Robinson in Paris, August, 1828; he foretold that by Christmas it would be in use in London, and his prophecy was fulfilled. Shillibeer's 'buses were drawn by three horses, and carried twenty passengers inside and nine out. For every 'bus ride, long or short, the charge was 6d. The cabriolet was peculiar to London, and was invented by Davies in 1823. Eight were licensed then, and plied at fares one-third lower than those of hackney coaches. The cabriolet or cab was for one passenger, who was protected by a high hood, which separated him from the driver sitting by his side. Hansom's patent cab (1834) had a square body in a square frame, with wheels as high as the vehicle. In 1836 Gillett and Chapman, improving on this model, produced the modern hansom. Street tramways, though tried experimentally in the Bayswater Road and other London streets by an eccentric American genius, G. F. Train, for a short period in 1861, and at Birkenhead and elsewhere, were not used on a large scale in London till 1870, when the Tramways Act was passed.

Private Carriages.

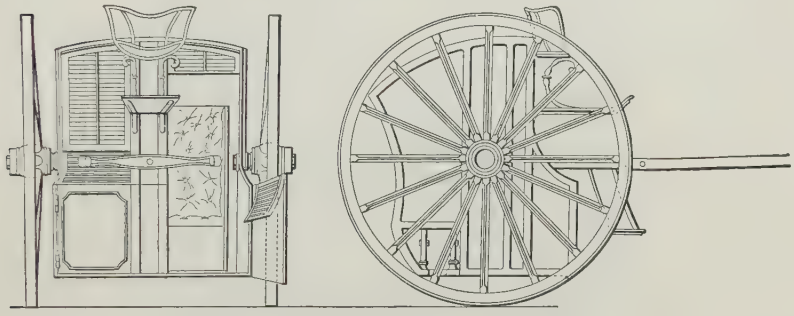
The fashionable family carriages in the period 1820–40 were yellow landaus, displaced in 1839 by the homely brougham, which allowed four to ride inside behind one horse. The dandy rode in a tilbury or curricle, which required two servants. There were also high four-horse phaetons, landaulets, Dennets or Stanhope gigs, Clarences, Vis-à-vis. The middle and lower

[1] *Cf.* Dickens's account of it in "Oliver Twist."

classes did not penetrate into Hyde Park at the fashionable hours, and then, as now, no hired cabs were there to detract from the brilliance of the scene.

Police.

The control of the traffic, which had belonged to the "street-keeper" in most parts of London, passed in 1829 to a new police force. There had been in 1818, 1822, and 1828 inquiries into the condition of the London police, which showed the organisation to be inadequate, antiquated, and indeed almost medieval in character. There was first the general police for the



SPECIFICATION DRAWINGS FOR HANSOM'S CAB, 1834.

City, under the control of the Lord Mayor and aldermen, which consisted of a number of officers engaged in day or night patrol, whose duty it was to visit the watch-houses and supervise the officers appointed by the wards. Each ward appointed a certain number of beadles, constables, watchmen, and street-keepers, paid by a rate levied on the ward. The beadles were annually elected; the constables, who were chosen in rotation from the inhabitants of the ward, and were bound to attend the whole night at the watch-house, received no salary, but could hire substitutes from £8 15s. a year. Only in some wards was there an afternoon patrol, from about three or four p.m. till the night watch was set. The watchmen were appointed by the Alderman and Common Council of the ward, and since the Act of 1817 care was taken to employ none but able-bodied men. Almost every ward had a street-keeper to regulate the traffic, who attended from eight a.m. till the patrol came on duty. Besides this central and local force in the City, there was the entirely separate police of the Dean and High Steward of

Westminster, and local forces in each parish of Westminster. Further, there was the separate establishment of magistrates and clerks and police officers at Bow Street with a foot and horse patrol under their authority, who were established in 1805 to prevent highway robberies within twenty miles of

MASTER DOGBERRY, THE PARISH WATCHMAN.
(*From a satirical print of* 1829.)

London; and also a separate organisation for the Thames police, and for six other police-courts.

The Act of 1829 declared that the limited sphere of authority and the want of connection and co-operation rendered the force inadequate, wherefore a new force under the direct control of the Home Secretary was created, and London was mapped out into police districts, all obedient to two officials, who were at first called Justices of the Peace, and in 1839

became Commissioners. In 1856 the two Commissioners were replaced by one Commissioner and two Assistant-Commissioners. The City of London was not to be one of the Metropolitan police districts, but in 1839 it was secured that the police of the City should be of the new type under the control of the civic corporation. The original change was not brought about without a severe struggle with vested rights, and the scheme was believed to be part of a great plot to establish a military despotism. Cobbett raved against a police establishment *à la* Bourbon, with commissaries at the head and with subaltern officers, with men in an uniform dress, and with others *dressed like other people*, going about into all companies and places, and communicating what they saw and heard to the commissaries. By this system he believed that Sir Robert Peel had laid the foundation of an Austrian slavery or of a dreadful convulsion. Ultimately, however, the principle of centralisation was applied to the whole country; first by the permissive Act of 1839, which allowed justices at Quarter Sessions to create a paid constabulary, and next when, in 1856, this permission became compulsion.

JAMES COLVILLE. Scotland.

THE fever heat which had carried the nation to the triumphant close of the great war was followed by a reaction in which every industry was depressed, every interest disaffected. In 1812 the weavers of the west formed their first formidable combination against low wages and dear meal. They found it hard to exist on a weekly pittance of 8s. 6d. with meal at 3s. a peck. But the Riot Act and the shooting down of luckless victims on the streets of Glasgow crushed disaffection. Probably there were never so many destitute at one time in Edinburgh as in 1816—a sad year for the poor, for the harvest had been unusually bad, foreign markets were glutted, and wheat was doubled in price. During the winter of 1819–20 the Clyde was frozen over for months, and employment scarcely to be had. The starving weavers flocked to Edinburgh, where relief works had been started. The heads of the well-to-do classes were stuffed with rumours of the secret drilling and arming of a vast Radical horde, and everywhere yeomanry and sharpshooters were volunteering against mob law. The excitement culminated

in the Bonnymuir rising of April, 1820, a sort of Scottish Peterloo.

Radical Rising.

It seems to have been a diabolical plot of the party in power to entrap the disaffected into overt action. On the first Sunday of April all Glasgow was thrown into panic over a treasonable placard, calling upon the oppressed to "assert their rights at the hazard of their lives." A Government spy induced about a hundred desperate weavers to march towards Carron, and after a weary trudge the famished band were set upon by cavalry from Stirling and taken prisoners. Three of these deluded visionaries were tried and executed as leaders—Hardie, Baird, and Wilson. Carlyle, visiting Edward Irving in Glasgow immediately after the affair, says, "The Radicals are quiet. How many lies have been told about them! Poor wretches, they are to be pitied as well as condemned." As a student in Edinburgh, he had just "seen substantial burghers and other idle loyalists training themselves to the use of arms for suppressing imaginary revolts of the lower orders. Steel pills, though a very natural, are a very inefficient remedy for a decayed constitution."

George IV. visits Edinburgh.

To the great delight of the Tories, George IV. visited Edinburgh in August, 1822. Scott's adaptation of an old song, "Carle, now the king's come!" was on every lip. He landed at Leith and held court at Holyrood amid a burst of romantic enthusiasm unknown since Prince Charlie's entry into his northern capital. It was calculated that one-seventh of the entire population feasted their eyes on their anointed king, whose sartorial sentiments must have been gratified by the magistrates' command to the citizens to dress for the occasion in nankeen pants, white vest, St. Andrew cross in hat as a cockade, and blue coat with "Welcome" on its large gilt buttons. Christison saw it all as a lad, and very sensibly remarks—"Sir Walter Scott as M.C. and costumier was responsible for spreading the common delusion of Englishmen and foreigners that Scotland is *a nation of Celtic Highlanders*," an absurd delusion still growing in vogue daily.

The Reform Act.

No part of the kingdom took a more earnest or intelligent share than Scotland in the constitutional victory of 1832. With the opening century reforming principles had spread, mainly from the University and the Bar, and this through the influence of such men as Brougham, Jeffrey, Cockburn, Horner,

Sir William Petty, and Lord John Russell—all legitimate products of a Scottish education in political reasoning. This was all the more surprising as Edinburgh University was under the control of the Town Council, Tories to the backbone, while the Court of Session had always been an appanage of the landed interest. A notable incident of 1817 was the appearance of

FRANCIS HORNER, BY SIR HENRY RAEBURN, R.A.
(*National Portrait Gallery.*)

an independent weekly, the *Scotsman*. Carlyle notes at the time that he had seen the first three numbers—"*all a little violent in their Whiggism.*" Bitter partisan hostility was a feature of social life then. The scandalous licence of the Tory journals led to a fatal duel, the great sensation of the day, when Stewart of Dunearn mortally wounded Boswell, son of Johnson's biographer. Another sign of the times was the frequency of great political meetings to petition on public questions, culminating in a notable gathering in 1830 to congratulate the French on their successful revolution.

The fate of the Reform Bill was followed with breathless

interest. Charles, now Earl, Grey, had warmly supported Thomas Muir in 1793–94, while Lord John Russell had sat at the feet of Dugald Stewart, the Edinburgh Professor. A general illumination in Glasgow marked the second reading of the Bill in the Commons. But the news of its rejection in the Lords was received by a crowd of about ten thousand indignant citizens, waiting patiently at the Edinburgh post-office, while similar sights were common in every considerable centre. When success was assured, a lovely August day of 1832 saw Bruntsfield Links and the Meadows covered with orderly processions and rejoicing spectators, all joining, with the earnest devotion of a Covenanters' Sacrament, in the sublime strains of "Scots Wha Hae!"

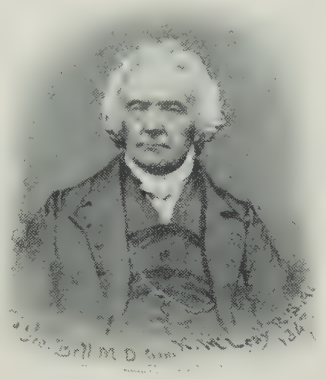
The Church.

The Church had long afforded the only open arena for advanced popular opinion. Moderatism and Dissent were now, thanks to fresh social problems, joined by a new power, Evangelicalism. These forces were respectively *conservative, exclusive,* and restlessly *aggressive.* Moderatism, very much the creation of Principal Robertson, the historian, had been, in its best days, an immense power for good in liberalising thought and action. This is what a keen but not very friendly critic like young Carlyle thought of its founder in 1824, when this once all-powerful movement was on the wane: "I used to find in him a shrewd system but not a great understanding, and no more heart than in my boot. He was a kind of Deist in the guise of a Calvinist priest, a portentous combination." A new spirit broke in upon his well-ordered system when Chalmers began (1815), in the densely peopled Tron parish of Glasgow, "to excavate the heathen," as he called the innovation. His week-day sermon, the Astronomical Discourses of his published works, was the first attempt to attract alike the religious and the literary public through the pulpit. His Sunday schools took up the movement which Dr. Burns, kindly minister of the neighbouring Barony parish, had inaugurated as early as 1775, five years before Raikes began work at Gloucester. The task upon which Chalmers and his eloquent assistant, Edward Irving, entered with such enthusiasm was the most notable social factor of the time. But an unkind fate has too often decreed that when some of Scotland's greatest appeared—Knox, Henderson, Chalmers—the bitter warfare of church polity, and not social amelior-

ation through Christian endeavour, has been the question of the hour.

Industrial Progress.

George Burns, of Cunard fame and a pioneer of ocean travel, rapidly developed the work which Henry Bell began, and, thanks to his energy and enterprise, before 1830 his deep-sea steamers were running from the Clyde as far as Liverpool and Dublin. They were engined by Robert Napier, a Glasgow blacksmith of great genius. In Aberdeen, Hall's clippers were carrying emigrants over the globe. From Glasgow and Dundee the weaving of cotton and linen was overflowing into the fields, and the click of the shuttle was heard in every hamlet. Savings banks, set agoing through the Rev. H. Duncan of Ruthwell in 1810, were helping the people to tide over the failures of 1826. The Union Canal (1822) connected Edinburgh and Glasgow; the Caledonian, the east and west sides of the island. Both cities were lit up by gas in 1818, and in the same year Edinburgh enjoyed her Crawley water, brought by gravitation from springs in the Pentland Hills. Magnificent new approaches adorned the city, 1823–27. Her School of Arts (1821) was spreading the technical education which the Andersonian People's College in Glasgow had begun, while to the activity of her medical teaching was due the Anatomy Act (1829), which followed the revelations of 1828 (p. 91).



THOMAS CHALMERS, BY KENNETH MACLEAY, R.S.A.
(*Scottish National Portrait Gallery.*)

P. W. JOYCE. Ireland.

For many years about this time there was great and widespread distress, arising partly from the stagnation of business after the conclusion of the Continental wars, and partly from the pitiless exactions of landlords, middlemen, and tithe-proctors. The misery culminated in 1822, when there was a general failure of the potato crop. There was much disturbance among the

starving and despairing peasantry, and there were numerous outrages, followed by the usual coercion acts with wholesale arrests and prosecutions, without the least effect in producing tranquillity; and the country was kept down only by an army almost as large as if it had just been conquered in a successful invasion.

Catholic Emancipation.

In 1823 the "Catholic Association" was founded by O'Connell and Richard Lalor Sheil, and soon spread through the whole country. The expenses were paid by what was called "Catholic Rent," a contribution of a penny a week from each member; and this organisation was the chief agency by which Emancipation was ultimately carried. In 1828 Mr. Vesey Fitzgerald, Member of Parliament for Clare, having accepted office, had to seek re-election, and O'Connell determined to oppose him. He knew well that he could not enter Parliament, for the admission oath was such as no Catholic could take; but he wished to bring before the electors of Great Britain the hardship and absurdity of disfranchising a constituency because the chosen member refused to swear that his own religion was false. Notwithstanding the crushing influence of the landlords he was returned by an immense majority. The Government were now greatly alarmed, and all the more so when they heard that the Catholic Association were preparing to return Catholic members all through Ireland. Wellington and Peel gave way, and introduced a Bill, which after a stormy debate was carried in the Commons. The opposition was still more violent in the Lords; but Wellington ended the matter by declaring that they should choose between Emancipation and Civil War; whereupon the Bill passed, and received the royal assent on April 13th, 1829. The Act contained one provision, raising the franchise in Ireland from 40s. to £10; though the qualification for England remained at 40s. (p. 12). By the Emancipation Act a new oath was framed which Catholics might take; and at the General Election of 1830, O'Connell and several other Catholics were returned.

National Education.

Hitherto the primary education aided by the State in Ireland was exclusively for Protestants; and Catholic children could not attend the public schools, as they would have to join classes receiving Protestant religious instruction. This state of things was remedied in 1831, when the system of National Education

A PARLIAMENTARY GAME OF SHUTTLECOCK.

(From a satirical print of 1829.)

was founded, which Catholics were able to take advantage of, inasmuch as it provided for separate religious instruction for children of different religious denominations. This measure turned out very successful; for since 1831 both the Government subsidies and the number of schools have gone on increasing year by year.

Reform of 1832.

After the great Reform Bill had passed for England in 1832, a corresponding Bill was introduced for Ireland in the same year. But though the Irish members led by O'Connell and Sheil had materially aided the Government in passing the English measure, the Irish Bill was narrow and unsatisfactory. The franchise was limited to tenants of £50 a year and leaseholders of £10 a year for 99 years. The Irish leaders attempted to have the franchise restored to the 40s. freeholders; but the ministers had the amendment voted down (p. 15).

Tithe War.

Of all the payments exacted from the peasantry tithes were the most bitterly resented; for their gross injustice was obvious to the most ignorant. The Protestant clergy lived comfortably all through the country, and ministered on Sundays in decent well-kept churches to congregations of perhaps half a dozen, or less; for all which the Catholic people were forced to pay—to support the clergy and keep the churches in repair; while their own priests lived in poverty, and celebrated Mass to overflowing congregations in thatched cabins or in the open air. And whenever tithe-payment was not at once forthcoming, the tithe-proctors seized and carried off the poor people's cows, fowls, bed-clothes, kettles, or anything they could lay hands on. At length, about the year 1830, a vehement movement arose almost simultaneously against tithes—quite a spontaneous uprising, not incited by leaders or agitators from outside; and for some years a destructive "tithe war" raged, especially in the south of Ireland. The military and police were called out to support the proctors, and there were frequent conflicts, with great loss of life. But even when a seizure was made, it commonly turned out useless; for no one dared bid for any seized article set up for sale; or if by chance a sale was effected, the purchasers were pretty sure to suffer outrage of some sort. The proctors were everywhere pursued with vengeance, often mutilated, and sometimes killed. Then came, of course, a Coercion Act; and the military engaged in this warfare formed

quite a large army; yet they succeeded in collecting only a small fraction of the total sum assessed, and even that at a cost far exceeding the amount collected. Hundreds of the Protestant clergy received little or nothing, and were reduced to destitution, seldom through any fault of their own, for they were the victims of an unjust and unwise institution; and the Government had to come to their relief by advancing a million on loan. At length, some years later (1838), the tithes were put on the landlords instead of the tenants, which terminated the tithe war.

THE FREEHOLDER BETWIXT PRIEST AND LANDLORD.
(*From a satirical print of* 1829.)

AUTHORITIES.—1815–1832.

GENERAL HISTORY.

Sir Spencer Walpole, *History of England from the Conclusion of the Great War in* 1815; Harriet Martineau, *History of the Peace;* May, *Constitutional History;* Justin McCarthy, *Modern England;* Fyffe, *Modern Europe;* Debidour, *Histoire Diplomatique de l'Europe;* Molesworth, *History of the Reform Bill;* Wheeler, *History of India;* Duke of Buckingham, *Memoirs of the Court of the Regency; Correspondence of William IV. and Earl Grey;* Le Strange, *Correspondence of Earl Grey and Mme. de Lieven;* Greville, *Memoirs; Croker Papers;* Pellew, *Life of Lord Sidmouth;* Twiss, *Life of Lord Eldon;* Alison, *Lives of Lord Londonderry and Sir C. Stewart;* Yonge, *Life of Lord Liverpool;* Stapylton, *George Canning and His Times* and *Canning's Speeches;* Peel, *Memoirs* and his *Correspondence*, edited by C. S. Parker; Herries, *Life of J. C. Herries;* Torrens, *Life of Lord Melbourne;* Sanders, *Melbourne Papers;* Sir D. Le Marchant, *Life of Lord Althorp; Brougham's Life and Times;* Spencer Walpole, *Life of Lord John Russell; The Creevey Papers*, 1903; Fitzpatrick, *O'Connell's Correspondence;* Metternich, *Memoirs;* E. Porritt, *The Unreformed House of Commons*, 1903, gives a full account of the conditions of Parliamentary representation in the three Kingdoms before the Reform Act.

SPECIAL SUBJECTS.

Naval History and Church History.—*See* list appended to ch. xxiv.

Literature, 1815–1885.—Saintsbury, *Nineteenth Century Literature*, for the subject generally. In poetry the growth of Tennyson's genius is lucidly exhibited in Mr. Arthur Waugh's *Tennyson: A Study of his Life and Work*. For an acute and valuable, though not unprejudiced, criticism of Macaulay's prose style, chap. ii. of the late J. Cotter Morrison's *Macaulay* ("English Men of Letters" Series) may be consulted with advantage; and an appreciation of Carlyle's literary characteristics, and of his past and present relation to the thought of the age, will be found in the introduction to the Centenary Edition of his works.

Geology, 1815–1885.—Besides the more special works mentioned in the text, the following will be found useful:—J. Playfair, *Biographical Account of James Hutton;* J. Phillips, *Memoirs of William Smith;* A. Geikie, *Life of Sir Roderick J. Murchison*, 2 vols.; J. W. Clark and T. McK. Hughes, *Life and Letters of the Rev. Adam Sedgwick*, 2 vols.; *Life, Letters, and Journal of Sir C. Lyell*, edited by Mrs. Lyell, 2 vols.; T. G. Bonney, *Lyell and Modern Geology;* A. Geikie, *Life of Sir A. Ramsay*, and *Letters of J. B. Jukes;* F. Darwin, *Life and Letters of Charles Darwin*, 3 vols.; W. D. Conybeare and W. Phillips, *Outline of the Geology of England and Wales;* H. B. Woodward, *The Geology of England and Wales*. The details of the development of the subject will be found in the publications of the Geological Society; first in the *Transactions* (1811–56), and the *Proceedings* (1826–45), and then in the *Quarterly Journal* (vol. i., 1845). To these may be added *Memoirs* and other publications of the Geological Survey, and the annual volume of the Palæontological Society.

Art, Chemistry, Textiles.—*See* chaps. xxii., xxiii. and xxiv. respectively.

Medicine.—The General History of Medicine in the earlier part of the century may be read in Clarke's *Autobiographical Recollections of the Medical Profession* (1874, II.); in Dr. C. J. B. Williams' *Memorials of Life and Work*, 1884; and in Sir Robert Christison's *Life*, ed. by his sons (1885–86). The condition of the schools of anatomy before the passing of the Anatomy Act is well described in Lonsdale's *Life of Robert Knox*. The professional reader may refer with advantage to the Report of the Select Committee on Anatomy (folio, 1832), and to J. Blake Bailey, *Diary of a Resurrectionist* (1896). The evil effects of intramural interment can only be adequately appreciated by reading the disgusting details given in the Report of the Select Committee upon the effect of the interment of bodies in Towns (1842). Sir Thomas Longmore has prefixed a short history of the Army Medical Service to his *Manual of Ambulance Transport*, ed. 2,

by Surg.-Capt. W. A. Morris, A.M.S., 1893. Sir John Simon has published an admirable history of English Sanitary Institutions (Lond., 1890); whilst the history of Dentistry has been written by Alfred Hill (Lond., 1877), and the history of the Medical Education of Women by Miss Sophia Jex-Blake (12mo, 1880).

Agriculture, 1802–1846.—William Cobbett, *Tour in the Northern Counties*, *Rural Rides*; *Journal of the Royal Agricultural Society of England*, 1*st Series*; Harriet Martineau, *History of the Thirty Years' Peace*; Sir George Nicholls, *History of the English Poor Law*, and *On the Condition of the Agricultural Labourer*; Sir Robert Peel, *Speech on the Repeal of the Corn Laws in the House of Commons*, 1846; G. R. Porter, *Progress of the Nation*, 1843; A. Prentice, *History of the Anti-Corn-Law League*; Reports of Select Committees on the Operation of the Poor Laws, 1817, 1834, 1844, and on Agriculture (*see* below); J. E. Thorold Rogers, *History of Agriculture and Prices*, and *Six Centuries of Work and Wages*; Russell M. Garnier, *History of the English Landed Gentry*, and *Annals of the British Peasantry*.

Economic History, 1802–1885.—The most important materials are to be found in Reports of various Parliamentary Committees and Commissions, especially on *Agriculture* in 1821, 1822, and 1833; on *Machinery* in 1824; on the *Poor Laws* in 1821, 1834, 1843, 1845, 1847, and 1849; on *Finance* and *Currency* in 1819, 1828, and 1841; on *Children in Factories*, 1816, 1833, 1842, and 1883; on the *Coal Trade* in 1830, 1844, and 1871; on *Framework Knitters* in 1845; on *Handloom Weavers* in 1839 and 1840; on *Joint Stock Companies* in 1844. To the list given in Vol. V., p. 513, we may add S. and B. Webb, *History of Trade Unions*; Holyoake, *History of Co-operation*; Frome Wilkinson, *Friendly Societies*; Goschen, *Foreign Exchanges*, and the works on Economics by Mill, Marshall, Walker, Cairns, Jevons, Bagehot, etc. There are many important papers in the *Journal* of the Statistical Society, but any adequate list of authorities would occupy more space than can be afforded here.

Social Life and *Scottish History*.—*See* ch. xxiii. For the society of this period, Ashton, *Social England under the Regency*, will be found useful. *Ireland*.—*See* ch. xxiv.

THE HOUSES OF PARLIAMENT IN 1821.
(*From an aquatint by R. Havell.*)

CHAPTER XXII.

THE NEW SPIRIT AND THE NEW PATHS. 1832–1846.

LLOYD C. SANDERS. Political History.

THE troubles of the Grey Ministry by no means ended with the reform of Parliament. The new House was eager for further changes, but the Government, confused by conflicting demands and divided against itself, introduced large and ill-considered Bills. Ireland, besides, blocked the way to English legislation. More formidable than O'Connell's Repeal agitation was the war against tithes (p. 148), supported by organised outrage. After a disastrous attempt to collect the unpopular tax itself the Government passed a Composition Bill, which by securing the advances to the Irish clergy on a land tax invited further resistance to the law. Lord Althorp's Irish Church Bill, again, was reduced to a disappointing fragment, which suppressed a few sees and docked the incomes of others. He dropped the Appropriation clause, permitting the use of surplus moneys for secular purposes. The terrific indictment of O'Connell by the Chief Secretary, Lord Stanley, secured the passage of a drastic Irish Coercion Bill, but he was shortly afterwards transferred to the Colonial Office to mollify the resentment of the Liberator.

Emancipation of the Slaves.

Stanley proceeded to carry a Bill abolishing slavery in the West Indies. A plan for gradual admission to freedom had been tried, but neither planters nor negroes accepted it loyally, and it was far from satisfying Sir Thomas Fowell Buxton and his fellow-enthusiasts. Stanley's Bill secured immediate freedom for all children of six years of age and under. The rest were to serve a twelve years' apprenticeship; but this expedient was abandoned after four years' disheartening experiment. The planters received the comfortable compensation of £20,000,000.

Finance in 1833.

Lord Althorp bungled his Budget, being defeated on a motion for the reduction of the malt tax by one-half. He was driven to threaten the House with a general property and income

tax, and Opposition votes turned the scale. The Government, however, renewed its contract with the Bank of England for twenty-one years, and made bank-notes legal tender, in spite of an irrational outcry against the possible depreciation of paper.

A New Ministry.

The session of 1834 found the Grey Ministry tottering. Lord Durham, after insulting his father-in-law, had resigned because it was not sufficiently Radical. There followed the retirement of Stanley and the more Conservative members,

A PROTEST AGAINST EMANCIPATION.
(*From a satirical print of* 1833.)

who were frightened by a motion of Mr. Ward's on the Irish Church, embodying the principle of the Appropriation clause. Finally, the meddlesomeness of Lord Brougham and the blundering indiscretion of Mr. Littleton, the new Chief Secretary for Ireland, produced hopeless mismanagement over the renewal of the Irish Coercion Act. Lord Althorp persisted in resigning, and in July Lord Grey declared the administration at an end.

On Lord Melbourne, who judiciously declined to form a Coalition Cabinet with Peel and Stanley, fell the thankless task of patching together the old Cabinet, with the assistance of Althorp. Before the prorogation of Parliament the Bill for the reform of the Poor Law passed (p. 302). It dealt with a rate

exceeding £8,000,000 and a lax system of relief that was fast demoralising the agricultural labourer. The new Act grouped parishes together, and established central workhouses, governed by Poor Law Guardians. It permitted the continuance of out-door relief for the aged and deserving under severe restrictions. Finally, it abolished the Law of Settlement, which prohibited

IRELAND'S BIG BEGGARMAN.
(*From a satirical print of* 1833.)

removals from one district to another in search of work (Vols. IV., p. 654; V., p. 176).

Lord Brougham occupied the recess with a vainglorious campaign in Scotland, during which he succeeded in picking a quarrel with Lord Durham. The proceeding was scandalous, and it confirmed the king in his desire to be rid of the Ministry. He found his opportunity when Lord Althorp, on the death of his father, was removed to the Upper House. Melbourne was summoned to Brighton, and was told that the Duke of Wellington would be requested to form an Administration.

AN APPROACHING CONGRESS.

(*From a satirical print of* 1833.)

Foreign Policy.

During these eventful years the strenuous diplomacy of Lord Palmerston had strengthened the credit of the country abroad. After tedious negotiations he succeeded in saving Belgium, which had risen in revolt against the House of Orange after the July revolution, from being overrun by the Dutch on the one hand, and from becoming a French province on the other. The candidature of the Duc de Nemours, a son of Louis Philippe, seemed likely to embroil England and France in war, but it was averted by Palmerston's firmness. He also exacted satisfaction from Dom Miguel, the Absolutist ruler in Portugal, who had seized British vessels; and his moral support of the cause of Donna Maria went far to secure its ultimate success. In Spain he promptly recognised Isabella as against Don Carlos, and in April, 1834, a Quadruple Treaty was signed by England, France, Spain and Portugal, binding them to compel the two pretenders to withdraw from the Peninsula. The British Legion, however, which was allowed to volunteer for Spanish service under an Order-in-Council, was disbanded after exploits the reverse of glorious. Nor was Palmerston able to prevent the Porte, alarmed by Mehemet Ali's rapid conquest of Syria, from surrendering itself to Russia, tied hand and foot by the Treaty of Hunkiar Skelessi (1833). He protested against it, as he protested against the abolition of constitutional liberties in Poland, but without avail.

The Tamworth Manifesto.

The news of Melbourne's dismissal reached Sir Robert Peel at Rome. Pending his arrival, the Duke had no fewer than four offices, but he at once surrendered the Premiership to Peel. A Ministry was formed including Wellington as Foreign Secretary, Aberdeen at the Colonial Office, and Goulburn at the Home Office. Peel recommended a dissolution, and issued the Tamworth Manifesto, which accepted the Reform Bill as "a final and irrevocable settlement," and advocated "a careful review of institutions, civil and ecclesiastical." The election failed to turn the balance of parties, and when Parliament met (February 19th, 1835) the Opposition carried Mr. Abercromby for the Speakership against Mr. Manners Sutton. Peel nevertheless fought that brilliant political campaign known as his "hundred days" before Lord John Russell defeated him on a motion embodying the principle of the Appropriation clause. "I certainly never remember," wrote Charles Greville, "a victory for which *Te Deum* was chanted with so faint and joyless a voice."

Lord Melbourne's second Ministry excluded Brougham, who had rendered himself impossible as a colleague. For the most part it was composed of old materials, Mr. Spring Rice becoming Chancellor of the Exchequer in place of Lord Althorp. It had no majority independent of O'Connell, and was, in consequence,

The Second Melbourne Ministry.

Photo : Walker & Cockerell.

SIR ROBERT PEEL, BY JOHN LINNELL.

(*National Portrait Gallery.*)

terribly weak. The Bill, however, for the reform of Municipal Corporations was carried before the close of the Session. It abolished much confusion and corruption, establishing in each corporate town a mayor, annually elected, and a town council for the management of borough funds. An amendment introduced in the House of Lords preserved their privileges to existing freemen. London was left untouched owing to the power of its vested interests.

Otherwise the record of the Ministry for the remainder of the

reign was one of failure. It carried a Bill legalising the marriage of Dissenters before the Registrar and in their own chapels, and a measure for the commutation of English tithe into a rent-charge based on the price of corn for seven years. But the Irish Tithe Bill was abandoned after the Appropriation clause had been rejected by the House of Lords, and a similar fate attended the Irish Municipal Corporations Bill. The English Church Rates Bill was introduced early in 1837, but it had not become law when, on June 20th, William IV. died. His hostility to the Whig party had latterly been most pronounced.

The Reign of Victoria.

The accession of a queen but eighteen years old, whose dignity and modesty delighted everybody, helped to strengthen the Ministry for the time being. Lord Melbourne set himself to form her mind, and discharged a delicate duty to universal admiration. The Government, after a general election, still lay at the mercy of Peel and Lord Lyndhurst on the one hand, and of O'Connell on the other. In the session of 1838 it passed the Irish Poor Law Bill, establishing a system analogous to that in England. The Irish Tithe Bill (p. 149) also became law after the Appropriation clause, on which the Whigs had staked their political reputation, had been rejected by the House of Lords, and the Government had tamely acquiesced in the rebuff. In 1840 the Irish Corporation Bill got clear of the House at last, after the Opposition had transformed it into what was practically a new measure. But though the Government displayed vacillation in Parliament, its Irish administration, thanks mainly to the Under-Secretary, Thomas Drummond, was most able and sympathetic.

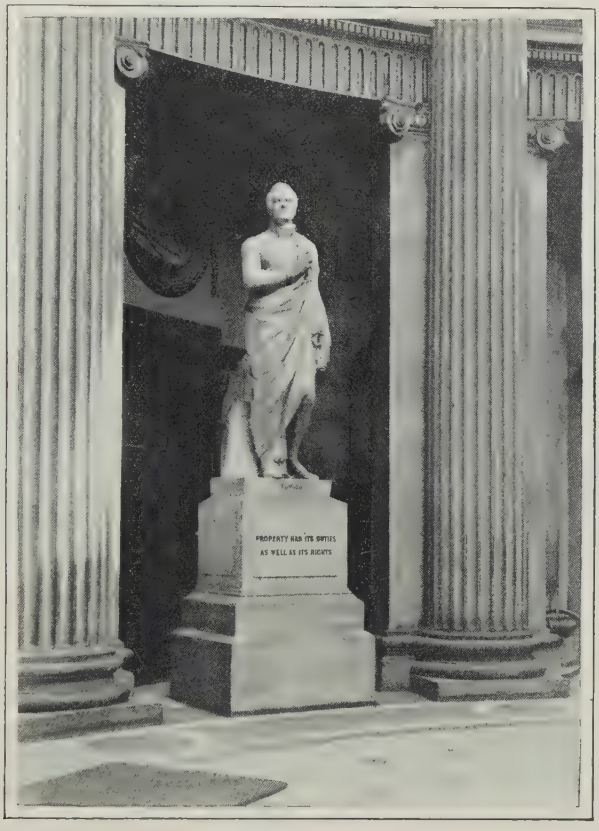
Penny Postage.

Whig finance, as represented by Mr. Spring Rice, was deplorably bad. In 1839 he took up the reform of penny postage (p. 328)—a question brought to the front by the persistency of Rowland Hill—but it resulted at first in a loss to the revenue, and his Budgets gave a series of deficits.

Chartism.

Trade was slack and employment scarce. The working classes, among whom trade-unionism had been rapidly spreading, thought that sweeping legislative reforms were the only remedy. A People's Charter was framed (p. 307) containing six points:—(1) universal suffrage; (2) the ballot; (3) annual Parliaments; (4) the abolition of the property qualification for members of Parliament; (5) payment of members; (6) equal electoral dis-

tricts. Their nominal leader was an empty braggart, Feargus O'Connor, but behind him lurked a Physical Force party. After a National Petition had failed to secure the attention of Parliament, the extremists gained the upper hand. Riots occurred



THOMAS DRUMMOND.
(The City Hall, Dublin. By permission of the Corporation.)

at Birmingham and elsewhere, and there was a pitched battle with the military and police in the streets of Newport. The severe punishment administered to Frost and his fellow-agitators gave pause to Chartism for awhile.

The two provinces of Canada were drifting into rebellion at the beginning of the reign, chiefly from the mutual jealousies of

Canada.

the French and English populations. Upper Canada was saved by the resource of the Governor, Sir Francis Head, who threw himself on the loyalty of the militia. In the Lower Province, Sir John Colborne put down the rising with British troops. Thereupon, the Government resolved to send out Lord Durham, armed with special powers. He promptly issued an ordinance by which eight Canadians were transported to Bermuda, and Papineau and fourteen more, who had fled the country, sentenced to death. Brougham forced upon the Government the disallowal of the

Photo: Siedle, Newport.

CHARTIST ATTACK ON THE WESTGATE INN, NEWPORT, 1839.

(*From a contemporary print.*)

ordinance, and Durham, who had left it without a word of information, resigned and came home. However, he had signed a "Report on the Administration of Canada," drawn up by Charles Buller, which gave full constitutional liberties to the colonists, and the appointment of an able Governor in Lord Sydenham put an end to discontent. Shortly afterwards the beginnings of constitutionalism were established in Australia, when, in 1840, New South Wales was permitted to elect two-thirds of its Council.

The Bedchamber Question.

In May, 1839, the Whig Ministry was beaten on the Jamaica Bill, and resigned. Peel, who was summoned by the queen, clumsily insisted that the Ladies of the Bedchamber should simultaneously give up their appointments. The queen absolutely refused, and the Whigs returned to place though not to power. They lingered long enough to see the queen happily

RELICS OF THE CHARTIST RIOT AT NEWPORT.

(By permission of the Committee of the Newport Museum and S. Dean, Esq., Westgate Hotel.)

married (February 10th, 1840) to the husband of her choice, Prince Albert of Saxe-Coburg-Gotha, and to produce a Budget, Sir Francis Baring's, imposing a low fixed duty on corn, instead of the sliding scale. But that conversion was too sudden to be sincere. Defeated in Parliament on a vote of want of confidence, they were placed in a considerable minority at the

J. G. LAMBTON, FIRST LORD DURHAM, BY SIR THOMAS LAWRENCE, P.R.A.

(By permission of the Right Hon. the Earl of Durham.)

general election of 1841. The opportunity for which Peel had been patiently waiting had come to him at last.

The Syrian Question.

Lord Palmerston's diplomacy had been, as always, bold and effective. He did away with the Treaty of Hunkiar Skelessi, by concluding (July 15th, 1840) the Quadrilateral Treaty, whereby England, Russia, Austria, and Prussia bound themselves to protect the Porte against aggression. But France—where sympathy ran strongly with Mehemet Ali, who had overrun Syria—resented this arrangement, and prepared for war. Fortunately,

Louis Philippe had more prudence than his Ministers. He dismissed the Thiers Cabinet and appointed instead a colourless Ministry under Guizot and Marshal Soult. The hold of Mehemet Ali on Syria proved, besides, to be exceedingly feeble. Beyrout was bombarded by the allies in November. A month later Acre fell and the Pasha submitted.

The Afghan and Chinese Wars.

Fear of Russia had meantime driven the Government into interference in Afghanistan. Dost Mohammed, who had received a Russian embassy, was dethroned, and the puppet Shah Sujah installed in his place. The Afghans rose, and massacred the British force that had been stationed at Cabul after treacherously promising that it should be allowed to retire (p. 174). Sir Robert Sale, however, made an heroic defence at Jellalabad, General Nott held Candahar, and the disaster was ultimately avenged by General Pollock. On the other hand, a war with China was forced on England by the high-handed conduct of Commissioner Lin, who confiscated 20,000 chests of opium, and, in order to stop the traffic, forbade British vessels to approach Canton. After tedious operations, and still more tedious negotiations, peace was declared in 1842, whereby we acquired Hong-Kong, and five ports were opened to commerce.

Peel's Second Ministry.

Peel's second Cabinet contained tried Conservative politicians in the Duke of Wellington (who did not take office), Lyndhurst, the Lord Chancellor, Goulburn, the Chancellor of the Exchequer, and Lord Aberdeen, the Foreign Secretary. Of the Whig seceders Stanley became Colonial Secretary, Graham Home Secretary, and Lord Ripon, formerly Lord Goderich, President of the Board of Trade. The Ministry seemed likely to last a generation. But Peel's hand was forced by the agitation of the Anti-Corn Law League, which had eloquent spokesmen in Mr. Villiers within the House, and in Cobden and Bright outside it. He had been returned to uphold Protection; he was rapidly forced to abandon that principle. The financial measures of 1842 modified the sliding scale, imposed an income tax of 7d. in the pound, and reduced duties on 750 articles. The effect was to annoy the agriculturists without conciliating the Corn-Law Repealers. The Budget of the following year contained, nevertheless, a further reduction of duties, notably that on timber.

The Budget of 1842.

In the session of 1842 Lord Ashley carried a Bill forbidding the employment of women, and limiting that of children in

mines and collieries (p. 312). Next year, Sir James Graham was forced by him to introduce a Bill lessening the labour and providing for the instruction of children in factories. The education clauses created such a clamour that the Bill had to be dropped. It passed in the session of 1844, without the obnoxious clauses, the hours of labour being fixed *at ten*, much to Lord Ashley's indignation.

Peel's Irish Policy.

In Ireland Peel found himself confronted by a revival of the Repeal agitation (p. 338). O'Connell was still its mouthpiece, but in alliance with him were Thomas Davis, Charles Gavan Duffy, and other excitable youths, calling themselves "Young Ireland," and favouring rebellion in their noisy verse. A series of monster meetings tried the patience of the Executive, and in October, 1843, a gathering at Clontarf was proclaimed. The arrest of O'Connell followed, and he was condemned for conspiracy, but the House of Lords reversed the verdict. His reputation had suffered a blow from which it never recovered. Young Ireland broke with him, and in 1847 he died on his way to Rome. To repress disorder Peel carried a stringent Irish Arms Act. He also appointed a strong Commission of Inquiry under Lord Devon to investigate the land question, and it presented a searching report. As a palliative to Roman Catholic grievances in Ireland he increased the grant to Maynooth College, and established the three "godless" Queen's Colleges. The Protestant outcry, led by Sir Robert Inglis, was long and loud, and Mr. Gladstone, the Vice-President of the Board of Trade, resigned from motives that were not particularly intelligible.

Lord Aberdeen's Diplomacy.

Lord Aberdeen conducted foreign affairs safely and unsensationally. Friendship with France inspired his policy, and except for an absurd quarrel about Mr. Pritchard, a missionary and British consul at Tahiti, whom the French admiral ejected from the island, relations ran smoothly enough. He also ended a troublesome dispute with the United States by despatching a special embassy under Lord Ashburton, which settled the Canadian frontier on terms that were reasonably equitable to both sides (1842). The controversy over the Oregon boundary was sharper, and President Polk threatened war. However, after an interval of tension, negotiations were resumed, and in 1846 both parties signed a treaty which left Vancouver Island to the English, and admitted the two nations to the Columbia river.

Lord Ellenborough, a Governor-General whose boastfulness detracted from his ability, had meanwhile despatched Sir Charles Napier to conquer Scinde. He defeated the Ameers at Miani (February 23rd, 1843), and annexed the province to the Bombay

The Scinde and Sikh Wars.

A MODERN CERES: PEEL'S CORN LAW OF 1842.
(Reproduced by special permission of the Proprietors of "Punch")

Presidency. The Governor-General, however, came to loggerheads with the Directors, and in the following year he was replaced by Lord Hardinge. The collapse of the Sikh empire on the death of Runjeet Singh was followed by the invasion of British territory. Our forces under Sir Hugh Gough were hard put to it before the victory of Sobraon secured a treaty of peace, by which the child Duleep Singh was recognised as ruler of the Punjaub, with Sir Henry Lawrence as Resident.

The followers of Peel were becoming increasingly suspicious

Young England.

of his Free Trade tendencies. The first to revolt were the Young England party, with Mr. Disraeli and Lord John Manners as its most prominent members. They began to attack Peel in the session of 1844, which was marked by a Budget abolishing the import and export duties on wool. In the same year Mr. Goulburn converted a great part of the National Debt from $3\frac{1}{2}$ to 3 per cent., and renewed the Bank Charter Act on terms that compelled the Bank of England to keep an adequate gold reserve and limited the issues of the country banks (p. 311). Discontent rose higher in 1845, when Peel, taking charge of the Budget,

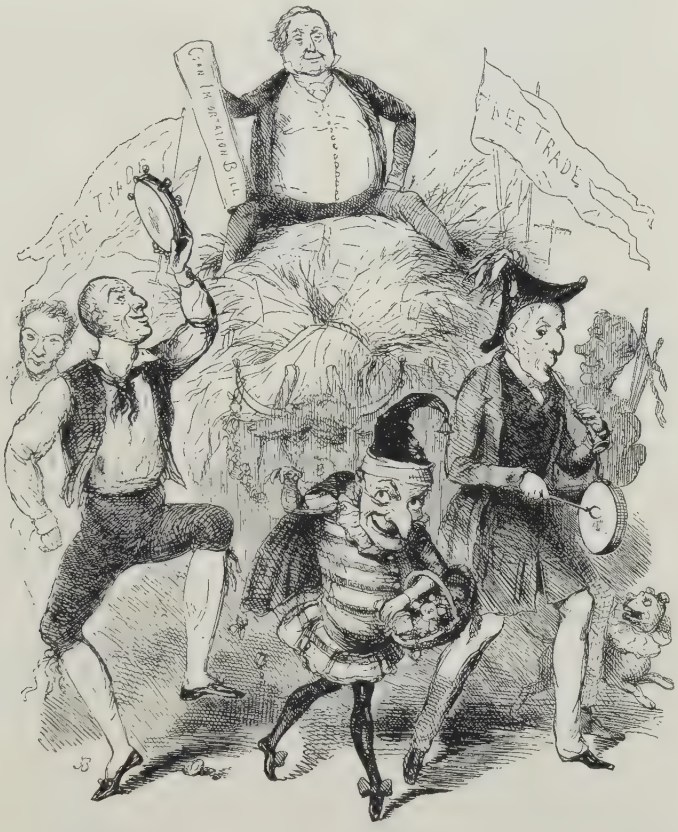
Approach of Free Trade

abolished the duty on raw cotton and 429 other articles, but did nothing, so the country members complained, for the agricultural interest. In the autumn the potato crop failed throughout Ireland, and grave differences of opinion divided the Cabinet. When Peel insisted on the suspension of the Corn Laws by an Order-in-Council, and their gradual abolition, Stanley and the Duke of Buccleuch resigned. Peel went down to Windsor and placed his own resignation in the Queen's hands. Lord John Russell, however, failed to form a Government owing to the refusal of Lord Grey, the son of the Reform Premier, to serve with Lord Palmerston, and Peel returned to office, replacing Stanley by Mr. Gladstone. On January 27th, 1846, he unfolded his plan, the proposal being that after the 1st of February, 1849, corn should be taxed at 1s. the quarter. Before that date the duty was to range between 10s. and 4s., according to price. Rallying round Lord George Bentinck and Mr. Disraeli, the Protectionists fought Peel with the resolution and vindictiveness of despair. Supported by Whig votes, however, Peel carried the third reading of the Corn Bill by a majority of 98, after a speech in which he assigned the merit of the economic revolution to Mr. Cobden. On the 25th of June the Protectionists found their revenge by joining the Opposition in voting against the second reading of the Irish Coercion Bill, and the Ministry fell. The system of party government seemed in imminent danger of disintegration.

G. LE M. GRETTON. The Army.

DURING the Napoleonic war money had been lavished by Parliament upon every branch of the military service. But when the troops returned in 1818 from the occupation of France they

found that the nation had grown weary of the soldiers to whose prowess in a great measure was due the proud position which England held among the nations of Europe. In peace time the



THE FREE TRADE HARVEST HOME; "PUNCH," MAY 30, 1846.

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army was virtually unrepresented in the Cabinet, and thus there was no minister to defend it against the attacks of the economists, who insisted upon an enormous reduction in military expenditure, carried out with complete disregard for military efficiency. The army was starved, both as regards the numbers in its ranks, and the supply of stores in its arsenals. So ruthlessly indeed was its *personnel* cut down that in 1821 only

Reduction after Waterloo.

101,000[1] men were left to defend the whole of the British possessions throughout the world. The Militia were disbanded, the Volunteers ceased to exist; thus behind the small regular army there were absolutely no reserves. Not more than half the troops were quartered in the United Kingdom; about 20,000 were in India, and the remainder garrisoned the colonies. It is said that the Duke of Wellington purposely stationed a very large proportion of the army out of England in order to keep them out of the sight of the public, among whom the old unreasoning dread of a standing army was still strong. Whether this is true or not, the fact remains that the policy of scattering the army in weak detachments throughout the British Empire was continued until 1870, when concentration, not dissemination, became the leading principle in the distribution of the forces.

Deficiency of Stores and Home Garrisons.

As regards stores, Wellington himself in his celebrated letter to Sir John Burgoyne, written in 1847, admitted that the supplies of guns, carriages, arms, ammunition, and *matériel* of every description were very inadequate, as successive Governments had been in the habit of disposing of these stores in order to reduce the amount of money which Parliament was annually asked to grant for military purposes. At this time war with France appeared imminent, yet only 30,000 men were stationed in the United Kingdom, a garrison which in the Duke's own words "would not afford a sufficient number of men for the mere occupation and defence, on the breaking out of war, of the works constructed for the defence of the dockyards and naval arsenals, without leaving a single man disposable" to take the field. Lord Palmerston in 1846 had warned his colleagues in the Cabinet that "this empire is existing only by sufferance and by the forbearance of other powers." But neither the energy of Lord Palmerston, the authority of the Duke of Wellington, nor the exertions of Sir John Burgoyne, could awaken the nation from its dreams of universal and unending peace. It was not

The Second Empire and the War Scare.

until 1851 that England was roused into a semblance of activity by the election of a nephew of the Great Napoleon to the Presidency of the French Republic. Then the Militia was revived, and 80,000 men speedily were enrolled in this the constitutional force of the country, while some steps were taken

[1] Exclusive of the Company's troops in India.

UNIFORMS OF THE 86TH REGT., 1842, AND 19TH REGT., 1848.

(*J. Cannon: "Historical Records of the British Army."*)

towards increasing the scanty numbers of the reserve of pensioners, instituted a few years previously. For the first time since 1815 an attempt was made to give some practical training in the field to the army at home. In 1853 8,000 men were assembled under canvas at Chobham. The officers and the men, no doubt, profited by their novel experiences in camp; but the Commissariat learned nothing, for the troops never ventured a day's march from the encampment; their horses and their carts were hired by the day, and their supplies were delivered on the spot by London contractors.

Recruiting.

For many years after Waterloo the army was thoroughly unprogressive; it rested on the laurels gained in the great war, and the best regiments were considered to be those which most closely adhered to the Peninsular standard. In some ways, indeed, the policy of the Horse Guards was distinctly retrograde. During the stress of the war with France, men had been allowed the option of enlisting for unlimited service or for comparatively short periods; but in 1829 these limited engagements were discontinued, and men were only enrolled for life-long service. As a great privilege, soldiers of thoroughly good character were permitted to purchase their discharge; as a punishment, men of especially bad character were expelled from the ranks with ignominy; but for the average private, until he should be invalided out of the army, there was no prospect beyond a life spent in unmeaning and monotonous details. Thus in 1829

> "it took the whole of a man's time to clean his things! His lock was bright; his white trowsers were pipe-clayed; he was three-parts pipe-clay, brass-ball, and blacking."

Barracks.

If quartered in India, a soldier had, at any rate, the chance of the excitement of active service, for there were frequent campaigns in the East; but if his corps was in Europe or the Colonies, he dragged out his existence under conditions which to us appear simply revolting. The barrack-rooms were overcrowded, often without fireplaces; and until the Duke of Wellington became Commander-in-Chief, each bed was shared by two soldiers. In many barracks the beds were arranged in tiers, like berths on board a ship. To each man the Duke allotted a separate bed, and thus redressed a great abuse; but

another and a far greater evil remained for many years unremedied. No separate quarters were provided for married soldiers; they were obliged to live with their wives and children in the general barrack-rooms. The only partitions which gave these families even a partial privacy were extemporised out of rugs and blankets hung round their beds. On board the transports decency was even more outraged than on shore, for at sea the women and children slept in hammocks, slung among those of the men, without even a screen to separate them. In barracks the washing appliances seem to have been even more scanty than the sleeping accommodation. An army surgeon in 1846 says that for "want of all conveniences of this kind, soldiers frequently washed their hands and face by filling a small tin with water at the pump, from which a man takes a mouthful which is squirted out into his hands and subsequently applied to his face."

UNIFORM OF THE 7TH (THE QUEEN'S OWN) HUSSARS.

(*J. Cannon, "Historical Records of the British Army."*)

Rations. The rations, though sound in quality, were monotonous to a degree. Every day in the year (except Christmas, when the officers provided their men with a good dinner) exactly the same viands, cooked in exactly the same way, were served out respectively for breakfast and for the midday meal. No supper was provided, so that the men were almost driven into the public-houses, to drown in beer the hunger which assailed them every evening.

Care of the Troops. Food for the mind, where any was provided for soldiers in the shape of libraries, was nearly as insipid as the eternal boiled

meat on which their bodies were fed. A sergeant describes the books provided for the troops at a large station in India as "very ill-chosen—a great number treated of abstruse, ethical, and doctrinal topics, much better calculated for the perusal of metaphysicians and divines." The same man incidentally mentions that at this station, where 1,200 Englishmen were cantoned, there was no Church of England chaplain, as the climate was considered too unhealthy for a clergyman to live in! In this connection it may here be stated that liberty of conscience in the army made a great stride in 1839 when it was ordered that no soldier who was a Roman Catholic or a Dissenter should be compelled to attend the Church of England, but that he should be at liberty to attend his own place of worship.

UNIFORM OF THE 9TH (THE QUEEN'S ROYAL) LANCERS IN 1841.

(*J. Cannon, "Historical Records of the British Army."*)

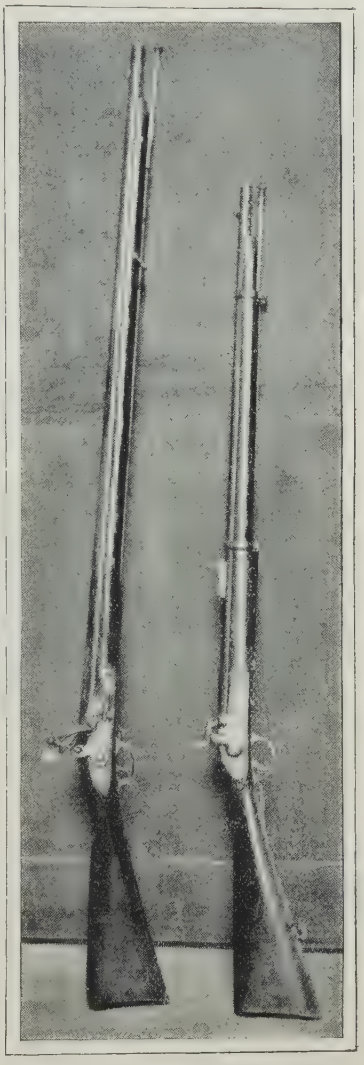
Although enlightened military opinion early in the century had declared against the abuse of the lash, flogging, though under ever increasing limitations, long continued to be in force in the British army. It was finally abolished in 1881; but as a matter of fact the cat, except on active service, and then only for acts punishable by death, had not been called into requisition for many years before its use became illegal. But during the first half of the century, when men misconducted themselves, they were either flogged, or imprisoned for terms varying with their delinquencies. Under the modern *régime* these sentences are now served in military gaols, where the soldier is kept absolutely free from the taint of civil prisons and civilian convicts; but before 1844 the men were confined in the common

Punishments.

Houses of Correction, and thus for purely military offences were condemned to associate with the lowest of the low. It is said that during the year 1833, not less than one out of every five men then serving in England passed through a civil prison. It is not surprising that to enlist for life into a service where men were so treated was regarded by the working classes as social suicide, and that parents preferred to see their sons in their coffins rather than in the uniform of her Majesty's army. In 1847 the system of life engagement finally broke down, and was replaced by enlistment for ten or twelve years. During the pressure of the Crimea and the Mutiny men were allowed to join for much shorter terms; and in 1870 the present principle of short service with the colours, and a further liability to serve while in the reserve, was definitely adopted.

Musketry. Although the accurate shooting of the British infantry had largely contributed to our victories in the Peninsula, musketry was entirely neglected during the dead period after Waterloo. "Soldiering in those days," writes a sergeant, "was all pipe-clay, drill, and discipline, and very little theory. 'Fire low, and hit 'em in the legs, boys,' was the extent of the instruction given to recruits." In vain did Sir John Burgoyne urge the Government to construct ranges where the infantry could be systematically taught the use of their firearms. Nothing was done, and as late as 1852 it was considered sufficient for the Guards to fire thirty rounds of ball once in every three years, which in some of the battalions was expended in a very primitive fashion. Behind the bull's-eye painted on a canvas target was concealed a bottle, and every man who was lucky enough to hit the unseen bottle at 100 yards' range received a money prize! On the eve of the Crimean war the Horse Guards tardily realised the extreme importance of musketry, and ordered that in future every man should annually fire ninety rounds with the "Minié" rifle, which had just been adopted for the army. Owing, however, to official indolence in overcoming the "great difficulties about ranges in this free country" which the War Office had already begun to experience in 1854, many young soldiers were sent to the Crimea who had never fired a shot in their lives before they found themselves in presence of the enemy. In 1855 the Minié rifle was superseded by the Enfield, which, about ten years later, was converted into the Snider, our first army breech-loader.

While the men were not taught to use their rifles, their officers were equally untrained to use their brains. As a rule, neither officers nor men knew anything beyond barrack-square drill; but this the soldiers knew to perfection, and the thorough discipline produced by its constant repetition stood them in good stead during the dark days of the Crimea and the Indian Mutiny. No steps were taken to teach young officers tactics or fortification, reconnoitring or military sketching; and ambitious men like Lord Wolseley, who voluntarily studied the theory and practice of his profession with equal zest, were few and far between. As there were no autumn manœuvres and no camps of instruction (except Chobham, in 1853), officers in England had no opportunity to learn the practical and all-important details which can only be acquired under canvas; and most of the troops who landed in the Crimea were so ignorant of everything connected with camp-life that they did not even know how to cook their food in the open air



BROWN BESS AND MINIÉ RIFLES.
(Royal United Service Institution.)

Regiments serving abroad had a far greater chance of learning the trade of war than their comrades in the United Kingdom, for the army in India had been fully occupied, and in many other parts of

Campaigns during the Fifty Years' Peace.

the world work had been found for British bayonets. Want of space renders it impossible to do more than mention the more important of these expeditions. Two campaigns on the Irawaddy (1824–26, 1851–52) transferred much territory from Burmah to Great Britain. The result of the third war against the Mahratta robber tribes (1818) was to give permanent peace to Central India. The hard-won conquests of Scinde (1843) and the Punjaub (1849) rendered our frontier

THE SIKH WAR: BATTLE OF FEROZESHAH.

(From a sketch by Major G. F. White, in J. Cannon, "Historical Records of the 31st Regiment.")

more secure against aggression from Central Asia, and added to our population splendid and warlike races, who are now among the most loyal of our fellow-subjects in the East. Russian intrigues involved England in a disastrous war with the Amir of Afghanistan (1839–42), memorable for the annihilation of our expedition in its retreat from Cabul (p. 163); when out of 4,500 men who attempted to fight their way back to India, but few survived to tell how a whole army had been cut to pieces by the wild tribesmen of the Khyber Pass. In South Africa the Kaffirs kept the garrison of Cape Colony frequently employed upon the frontier in weary and inglorious warfare (1819, 1829, 1834, 1850, 1853).

During the long wars of the French Republic and of Napoleon, when Sir John Henslow, Sir William Rule, and Mr. Henry Peake were successive Surveyors of the Navy, our chief improvements in naval architecture were copied from the best of the very numerous prizes which we took from our enemies. Indeed, we followed this plan for many years after the peace. Thus, as late as 1845 we laid down at Devonport a *Sans Pareil* designed upon the lines of the ship of the same name which we took from the French in 1794; although, it is true, we never launched the new vessel as a sailing line-of-battleship, but lengthened her a little while she was still upon the stocks, and converted her to a screw ship of 80 guns, launching her as such in 1851. But long ere that day there had come into office a Surveyor who, although he still occasionally reproduced the beautiful and fast French models, was not content to be a mere imitator, and was, in fact, a really great naval architect. This was Captain Sir William Symonds, Kt., R.N., who held the office from 1832 to 1847. Born in 1782, he had reached the rank of Commander when in 1825 he was permitted by the Admiralty to construct a corvette upon lines which he had ventured to recommend to the attention of the Government. This ship, the *Columbine*, was so great a success, that as a reward for the improvements which he had introduced, her designer was posted in 1827, upon the conclusion of an experimental cruise which he made in her. But the Admiralty was in a sluggish condition, and was not prepared to advance further; and but for the Duke of Portland, who gave Symonds an order to build him a yacht, and to embody in her all such features as would conduce to speed and seaworthiness, the great designer might never have been in a position to rebuild much of the old wooden navy for the last time. The yacht *Pantaloon*, presently purchased by the Admiralty and adapted as a 10-gun brig, was such a striking triumph that Symonds was at once employed to build the *Vernon*, 50, *Vestal*, 26, *Snake*, 16 and other men-of-war, and was within a few months made Surveyor. In that capacity he built in the ensuing fifteen years no fewer than 180 vessels, all on the principle, more or less varied, of the *Pantaloon*. His ships owed their superior speed and stability chiefly to the improved form of their bottom, which he made much less heavy and full than had previously been usual. They were, moreover, broader, roomier, and loftier

W. LAIRD CLOWES. The Navy.

The Last of the Wooden Walls

between decks than their forerunners; and in them the sailing navy of England undoubtedly found its very highest development. It is noteworthy that during his period of office not one of his vessels foundered, although not a few craft of other types did. Among his special glories were the *Queen*, 110, and the *Vernon*, which has been already mentioned. Another of his improvements was the introduction of the elliptical, instead of the circular or still older square stern. He also introduced a system under which the masts, yards, cross-trees, etc., of men-of-war were classified into twenty "establishments" or sizes, instead of into eighty-eight as before; and which was so ordered that the spars became interchangeable not only as between ship and ship of the same class, but also (though, of course, for different purposes) as between ship and ship of different classes.

Steam in the Navy.

But even while Symonds and his immediate predecessor, Sir Robert Seppings, were bringing the sailing man-of-war to its highest perfection, the use of sails was already doomed. Steam as a means of propulsion for ships had been used for a considerable period elsewhere, ere the Admiralty, ever a most conservative body, consented to try its merits. At length Marc Isambard Brunel (p. 280) succeeded in persuading their Lordships that they were behind the times, and that the use of steam must be countenanced even in the Navy. In consequence the *Comet*, a paddle wooden steamer of 238 tons and 90 horse-power, was built at Deptford in 1822, and presently the somewhat similar vessel *Monkey*, of 212 tons and 80 horse-power (I.H.P. 373), which had been built at Rotherhithe in 1821, was purchased for the use of the service. These and other early steam craft were either tugs, or what would now be called special service vessels; and it almost seemed as if the Admiralty were still determined to have as little as possible to do with them, for their construction did not come within the province of the Surveyor of the Navy; they were all purchased, or built by contractors; there was no regular corps of engineer officers to manage their machinery, the builders being expected to hand over with them the necessary engine-room staff; and at first not so much as the names of the vessels appeared in the official Navy List. But the new power soon forced itself into recognition. In 1832 the Surveyor designed his earliest steamers, among which were the paddle sloops *Tartarus*, 4 guns, 523 tons, 136 horse-power; *Prometheus*,

5 guns, 796 tons, 200 horse-power (and her sisters *Alecto*, *Ardent*, and *Polyphemus*); and *Gorgon*, 6 guns, 1,111 tons, 320 horse-power. There were also the *Merlin*, *Medusa*, *Medina*, *Acheron*, *Volcano*, etc., the earliest of which was launched in 1834 and the latest in 1841. All these were built of wood and had paddles as their propellers.

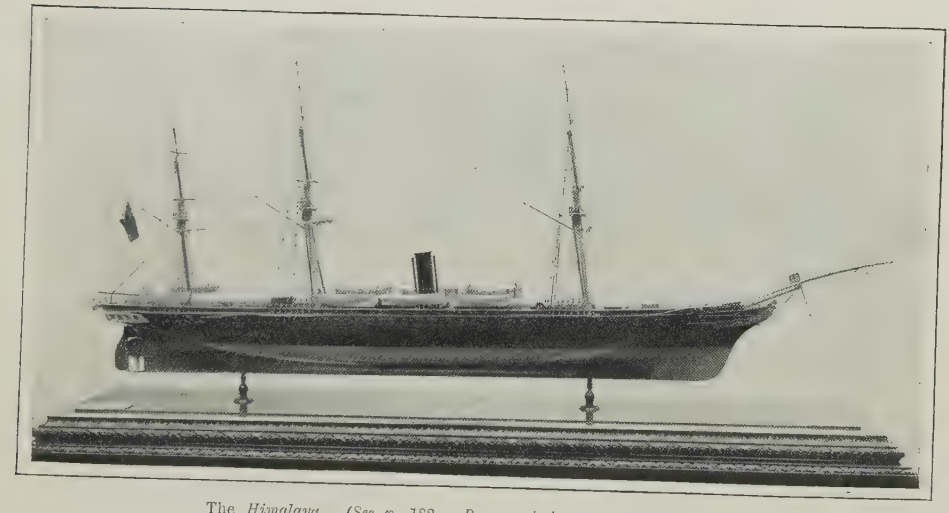
Iron Ships.

In the meanwhile iron as a constructive material, and the screw as a propeller, were attracting attention, in spite of the fact that their adoption, and even the making of experiments with them, were much opposed by the Navy, and particularly by Sir W. Symonds, who, able designer though he was, was full of unreasoning prejudices on the subject, and prophesied all sorts of evils if such innovations were made.

Iron lighters and similar craft were built in England quite early in the century; but no iron steam-vessels were constructed until 1821. In 1820 Mr. Aaron Manby took out a patent in France for iron steam-boats, and, with his friend Captain (afterwards Admiral Sir Charles) Napier, formed a Company, and began to construct the first boat at Horsley. She was not completed until the end of 1821. She was then sent to London in pieces, and put together in dock. Having taken on board a cargo of linseed and iron castings, she was put under the charge of Captain Napier, who navigated her from London to Havre, and thence to Paris. Mr. Manby, whose surname and Christian name had been given to the first vessel, afterwards constructed another craft of much the same kind at Horsley, and two more in Paris. From that time little advance seems to have been made until 1832. In that year the *Alburkha*, a little steamer of 55 tons, drawing only thirty inches of water, was prepared for the Niger Expedition; and almost simultaneously a larger craft, the *Lord William Bentinck*, was completed by Messrs. Maudslay, to the order of the East India Company, for service on the Ganges. She, however, was but 125 feet long and 22 feet broad. In the year following, the *Reine des Belges* was launched by Mr. Fairbairn at Manchester for use on the canal between Ostend and Bruges; and a considerably larger vessel, the *Lady Lansdowne*, was turned out by Mr. John Laird, of Birkenhead, for the City of Dublin Steam Packet Company. Although some of her forerunners proceeded to their destination by sea, the *Lady Lansdowne* appears to have been the first iron steamer deliber-

ately constructed with a view to occasional, if not regular, sea-service. She measured 133 feet in length by 17 feet in breadth; and she had a depth in hold of 9 feet 6 inches, engines of 90 nominal horse-power, and a tonnage, according to builders' measurement, of 148. In 1834 Mr. Laird built, and sent across the Atlantic, the *John Randolph*. She was transported piecemeal, and was put together again upon the Savannah river, where she was the subject of much curiosity, no iron steamer having been previously seen on American waters. These and other iron craft of about the same period were all paddle or stern-wheel vessels; nor was an iron screw steamer of any kind built until 1838, when Mr. Laird launched the little epoch-making craft *Robert F. Stockton*, which was fitted with an Ericsson propeller. She proceeded under canvas to New York, where for many years she was employed as a tug. Still the iron warship was entirely unknown. The first of the long series seems to have been the armed paddle steamer *Nimrod*, built for the East India Company by Mr. Laird in June, 1839. Exactly similar to her was the *Nitocris* of the same year; but both were small, being but 103 feet in length. They were, in fact, only gunboats. Other vessels more worthy of the name of warships were, however, launched from the same yard at the end of the year. These were the paddle steamers *Ariadne* and *Medusa*, of 432 tons, the *Phlegethon*, of 510 tons, and the *Nemesis*, of 660 tons. The last-named, built, like the others, for the East India Company, was armed with two 32-pounder pivot guns. Although she drew but five feet of water, she made the passage to India by way of the Cape of Good Hope; and subsequently, under the orders of Admiral Sir William Hall, she rendered excellent service during the operations in China. The British Admiralty did not possess an iron steamer until 1840, when the paddle packet *Dover* was launched for it at Birkenhead. In that year also it acquired three small iron paddle gunboats; but it hesitated for many years ere it made up its mind that, for large craft as well as for small, iron was a trustworthy material. In 1836 Mr. John Laird had proposed to construct an iron frigate, for which he prepared plans; but their Lordships were timorous, and declined to accept the offer. In 1842 he actually built and launched an iron paddle frigate of 788 tons; but the Government would

The *Fantôme* Brig.



The *Himalaya*. (*See p.* 182. *By permission of J. Hughes, Esq.*)

THE NAVY IN TRANSITION.

(*Victoria and Albert Museum.*)

have nothing to do with her, and she was eventually disposed of to Mexico. At length the Admiralty changed its views, the result being the launch at Birkenhead in 1846 of the ill-fated *Birkenhead;* the launch at Mr. Napier's Yard, Glasgow, in 1849, of the *Simoon;* and of the *Megæra* at Messrs. Fairbairn's Yard, Millwall.[1] These ships were at first classed as steam frigates, and armed as such; but experiments made upon an iron vessel called the *Ruby* induced the Admiralty to fear that they would be torn to pieces by the effects of shot upon them; and in consequence the ships were ultimately used as transports, their armament being greatly reduced. The tonnage of the *Birkenhead* was 1,400; that of the *Simoon*, 1,980; and that of the *Megæra*, 1,395. The first-named was fitted with paddles; the two last had screws. The general consequence was that up to the time of the Crimean War Great Britain possessed no iron fighting ships of any considerable size, iron being still regarded here as an unsuitable material to withstand the racking effects of shot striking, as they then did, at low velocities. The same views prevailed in France, but they had been less stringently applied; for as early as 1846 France launched a large iron screw corvette, *La Reine Hortense*, and the vessel seems never during her career on the active list to have been relegated to transport or other peaceful duties. But not until the introduction of armour-plating as a defence for ships did iron come into general favour, either in France or in England, as a material for the construction of the hull of a man-of-war. While its future still hung in the balance, another very important improvement, the screw propeller, had been finally adopted in lieu of the paddle, and still more of sail-power, as the sole means of propulsion.

The Screw.

Early in the nineteenth century Dr. Shorter devised a plan for driving vessels through the water by means of a circular fan, somewhat resembling the fan of the old-fashioned smoke-jack. It does not appear, however, that he had any

[1 The *Birkenhead* was wrecked off Simon's Bay, Cape of Good Hope, in 1852, when 454 persons perished, the crew and troops heroically maintaining perfect discipline till the last. The *Megæra* sprang a leak while conveying troops to Australia in June, 1871, and was beached on St. Paul's Island, in the Indian Ocean, where the crew and soldiers, with the women and children aboard, lived in huts for nearly three months. A Court of Inquiry declared that she had been unseaworthy, and censured several Admiralty officials.]

idea of having his propeller worked by steam. A generation later Mr. (afterwards Sir) Francis Pettitt Smith, who was a farmer at Hendon and the son of the postmaster at Hythe, turned his attention to the subject. In 1834 he constructed a model which was propelled by means of a submerged screw; in 1836 he took out a patent, and in 1838 he submitted his invention to the Admiralty. By that time Mr. Smith and the celebrated Swedish engineer, Ericsson, had become collaborators in the undertaking. The screw was applied to several small experimental craft, one of which, though only 45 feet long and 8 feet broad, towed a barque of 630 tons against a strong tide at a speed of nearly 4.5 knots; and later towed the Admiralty barge, with their Lordships on board, from Somerset House to Blackwall and back at an average speed of about 10 knots. But their Lordships, who included Vice-Admiral Sir Charles Adam, Rear-Admiral Sir William Parker, and Captain Sir E. T. Troubridge, curtly "declined to entertain the project" of fitting screws to naval vessels. These officers, in common with other people, appear to have been under the delusion that the screw was useful only in smooth water. An American gentleman, who had caused to be built for him the steamer *Robert F. Stockton*, already alluded to, also approached the Admiralty, but met with no better success, and recrossed the Atlantic in disgust. But shipowners were less blind than the naval officials; and in 1840 the *Archimedes*, a vessel of between 200 and 300 tons, fitted with Smith's screw, was launched, made the tour of Great Britain, and steamed without mishap to Oporto, Amsterdam, and other places. Her performances at length converted the obdurate Admiralty. In 1842 there was laid down for the Navy at Sheerness Yard a sloop named the *Ardent*. The Admiralty ordered her to be lengthened aft, to be fitted with a screw, and to be re-named *Rattler;* and as such she was launched in April, 1843. She was 176 feet long, 32 feet $8\frac{1}{2}$ inches broad, and of 888 tons; and she was given engines of 200 nominal horse-power. Her after-part was of a form very unsuited to assist the work of the propeller; yet she was so much of a success that, from the day of her trials, the future of the screw in the Navy was assured. Its future in the mercantile marine had been earlier decided; and the construction within a short period of the ocean-going screw steamers

Bengal (2,250 tons), *Simla* (2,600 tons), *Colombo* (1,900 tons), *Himalaya* (3,500 tons), and many more large craft, soon proved that the value of the invention was as great for big ships as for small. The form, pitch, number of blades, and other details of the screw have undergone, and will continue to undergo, modification; but the general principles of the designs of Smith and Ericsson have been, and are likely to be, retained throughout.

At first already existing vessels belonging to the Navy were fitted with the screw, after having undergone lengthening and other modifications for the purpose. Several very old ships of the larger classes were thus treated, including the *Ajax*, launched in 1809; the *Horatio*, launched in 1807; and the *Nelson*, launched in 1814. The first line-of-battle ship that was designed *ab initio* for the screw was the *Agamemnon*, of 50 guns. She was laid down at Woolwich Dockyard in 1849, and launched in 1852; and she it was that in 1857–58 was employed in the laying-down of the original Atlantic Cable.

W. H. HUTTON. The Church.

THE history of religious progress during this period is concerned primarily with the Church of England. From a purely historical standpoint the importance of Roman Catholicism, save for a brief moment, is practically negligible, while the prominence of the different bodies of Protestant Dissenters is slight when compared with their power in parts of the seventeenth and eighteenth centuries. This history can naturally be considered from two standpoints—(i.) the relations between Church and State, and (ii.) the growth of the Oxford or Tractarian movement.

Church and State.

I. The years succeeding 1833 brought nearer the necessity for important reforms. In 1834 Sir Robert Peel, as Prime Minister, said:—

> "If by an improved distribution of the revenues of the Church, its just influence can be extended and the true interests of the established religion promoted, all other considerations should be made subordinate to the advancement of objects of such paramount importance."

A Royal Commission to "inquire into the Revenues and Patronage of the Established Church of England and Wales" afterwards reported to the king on June 16th, 1835. The

report showed that the net revenues of the archbishoprics and bishoprics of England and Wales were £160,292, of the cathedral and collegiate churches £208,289, of the separate revenues of the individual members of the chapters £66,465, of benefices (the number being 10,718, including sixty-two sinecure rectories), £3,055,451. The average salary of a bishop was about £6,000, but this was reached by the enormous revenues of some of the sees (such as Durham, £19,066), while others were under or

THE NAVE, RIPON CATHEDRAL.

just above £1,000, and had to be supplemented by the holding of other appointments *in commendam*. Among benefices the greatest inequality prevailed. While there were 1,629 under £100 a year in value, there were 134 of between £1,000 and £1,500, 32 over £1,500 and under £2,000, and 32 over £2,000; the value of Stanhope, a parish covering a very large area of thinly populated country, being £4,813, with a population of 4,800. On this report was based an Act of Parliament passed in 1836, which re-arranged certain dioceses, and appointed an Ecclesiastical Commission to carry out various recommendations chiefly of a financial nature. The revenues of the sees and the

Endowments Re-adjusted.

chapters were readjusted on a more equitable basis. Two new sees, Manchester and Ripon, were created. Later on, many wholesome, or at least wholesale, reforms were effected in the case of the capitular bodies. Bishop Blomfield of London, a prelate of great vigour, desired to abolish 360 of the cathedral prebends, and succeeded in taking away all their revenues. The rearrangement of the incomes and duties of the residentiary canons met with the strongest opposition, both from Sydney Smith on its material and Dr. Pusey on its intellectual and spiritual sides. The opposition was to some extent successful, and the cathedral bodies were allowed to retain a staff and an income sufficient to enable them to remain, or become, the mother churches of the dioceses in provision for instruction, for the fullest dignity of worship, and for the support of learning. "The cathedrals," said Pusey, "have been the nurseries of most of our chief divines, who were the glory of our English name; in them these great men consolidated the strength which has been so beneficial to the Church." These and similar reforms, including a large step in the direction of the equalisation of benefices, have been carried on by the Ecclesiastical Commissioners in the period since 1840. In 1838 the Tithe Commutation Act was passed, which removed a considerable grievance. Politically the period admitted to civil privileges all those who stood outside the Church.

Convocation Restored.

Later incidents in the relations of the Church to the State may be conveniently summarised here. In 1852 Convocation, which had remained in a state of suspended animation since the reign of George I. (Vol. V., p. 549), again entered upon formal discussion. "The old machinery which had been unused for 135 years—mainly, it must be confessed, through the carelessness and want of information of the clergy themselves—was again put in motion. That the Crown had long ago violently interfered to dismiss the Convocation, and that there had never been since then any desire or encouragement on the part of the State for the clergy to meet in their synods, constituted in fact the whole of the obstruction which had so long prevented the action of Convocation."[1]

Roman Aggression.

In 1850 the country was startled by the issue of a Papal brief creating an archbishopric of Westminster and dividing

[1] Archdeacon Perry, "History of the Church of England," 3rd Period, p. 307.

England into twelve Roman Catholic dioceses. An extraordinary popular ferment ensued. Lord John Russell produced an Ecclesiastical Titles Bill, which was opposed by Mr. Gladstone on behalf of the Church, which considered it unnecessary and unwise to resist the aggression by an appeal to the power of the State. The Bill was much modified before it became law, and John Leech in *Punch* happily sketched the Prime Minister

LORD JOHN RUSSELL AND THE ECCLESIASTICAL TITLES BILL.

(*Reduction of Leech's Cartoon. Reproduced by special permission of the Proprietors of "Punch."*)

as "the boy who chalked up 'No Popery!' and then ran away." In 1855 a Royal Commission reported in favour of some very considerable changes in regard to the bishoprics and cathedral chapters; but no legislation resulted. Subsequent years, from 1860 onwards, were also marked by some serious contentions as to the relation of the civil courts to the Church, and by much discussion ending in the appointment, in 1867, of a Royal Commission to consider the ritual adopted of recent years in several churches, and the bearing upon it of the rubrics of the Prayer Book and the laws of the land.

Disputes on Ritual.

The Oxford Movement

II. Such was the external history of the Church. The internal was far more important and significant. A new movement, starting from Oxford and led by young tutors of the University, inspired a new life into the Church. "On Sunday, July 14th [1833]," says Cardinal Newman, "Mr. Keble preached the Assize sermon in the University pulpit. It was published under the title of 'National Apostasy.' I have ever considered and kept the day as the start of the religious movement of 1833."[1] Recent attacks on the Church, especially the suppression of the Irish bishoprics, seemed to Keble to call for a solemn protest against what appeared likely to become a "direct disavowal of the sovereignty of God." It was a solemn pronouncement against the "liberalism," in its anti-religious aspect, which Newman so greatly dreaded. In July a party of like-minded men met at Hadleigh Rectory, at the request of the Rev. Hugh James Rose. This was followed by the formation of an "Association of Friends of the Church" at Oxford; and in February, 1834, by the presentation of an address to the Archbishop of Canterbury, signed by 7,000 clergy, assuring him of their adherence to the doctrine, government, and formularies of the Church. A similar address signed by 23,000 laymen followed. The men round whom the movement centred were Hugh James Rose, William Palmer, John Keble, Richard Hurrell Froude, and John Henry Newman.

Hugh Rose was a Cambridge scholar of eminence, a literary man of acknowledged power, and a parish priest of devoted life. William Palmer was a learned man whose studies in the history of liturgies and whose valuable book on the offices of the English Church were supported by a "compact and defensible theory" of the "peculiar constitution of the English Church." John Keble had the highest University reputation, was already famous as a poet, and was a man of saintly life and uncompromising adherence to principle. Richard Hurrell Froude was an impetuous and critical genius in love with medievalism and abhorrent of the "defacements" of the English Reformation. John Henry Newman was poet, preacher, philosopher, and endowed with a marvellous attractiveness which soon gave to the movement its great popular strength. Originally an Evangelical, he had learnt the doctrine of Apostolic succession,

[1] "Apologia," p. 35.

and from Dr. Hawkins, the famous Provost of Oriel, that of tradition.

At first it was the adhesion of Keble which gave to the new movement its greatest power. "Keble," says Dr. Liddon,

CARDINAL WISEMAN, BY THOMAS BRIGSTOCKE.
(*By permission of the Lord President of St. Cuthbert's College, Ushaw.*)

"unlike Newman, had been a High Churchman all his life. His powerfully constructive mind grasped from the beginning the strength of the Anglican position as opposed to Protestantism and Rationalism, as well as to the yet unappreciated power of Romanism. He saw, as he stated in one of the earliest Tracts, that the Apostolical succession was the essential bond, recognised by sixteenth and seventeenth century divines, associating the

English Church through Reformation and Papal dominion with that primitive Catholicism in which Anglicans laid their foundations, and to which they had always appealed. He was never conscious of being an innovator. And with this firmness of conviction and principle he was able, in spite of his retiring disposition, not only to strike heavy blows in controversy, but on occasion to head protests and even agitations." The strength of the party was completed by the adhesion of Dr. Pusey, Regius Professor

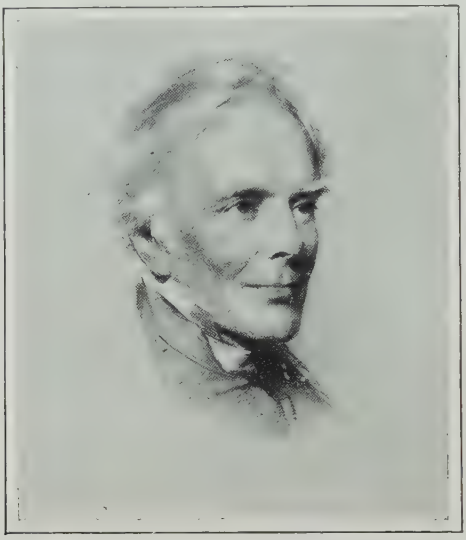


Photo: Walker & Cockerell.

REV. JOHN KEBLE, BY GEORGE RICHMOND, R.A.

(*National Portrait Gallery.*)

of Hebrew at Oxford, whose vast learning and recognised position gave to the associated friends at once "a position and a name."[1]

Antecedents of the New Party.

The intellectual origin of the party is not difficult to trace. It arose partly from the long and unbroken line of traditional teaching which passed back, through the great divines of the Caroline age, behind the Reformation, to the accepted theology of the undivided Western Church. This was quickened into new life by the renewed interest in the past evoked by the genius of Walter Scott, and fostered by the playful satire of

[1] "Life of Pusey," i., p. 271.

Thomas Love Peacock. Medieval life and art were seen to be not the rude offspring of a dark age, but to teem with romance and generous enthusiasm. The past was painted as in many ways more simple, more generous, more beautiful, and more Christian, than the present. A second influence, in its way no less powerful, was the new philosophy of Coleridge and his school. He was "a great force in making men dissatisfied with the

Photo: Walker & Cockerell.

CARDINAL NEWMAN, BY MISS EMMELINE DEANE.
(*National Portrait Gallery.*)

superficiality so common a hundred years ago in religion as in other matters; and in this, if in no other way, he prepared the English mind to listen to the Oxford teachers."[1]

Historically it will be seen that the Oxford Movement, like all other similar movements in the past, brought into special prominence a doctrine which the age had neglected. The Oxford teachers were filled with a deep feeling of the importance and the wide consequence of the Christian doctrine of the Holy

[1] "Life of Pusey," i., p. 254.

Catholic Church. It was this that linked them to the great divines of the English Church. It was this which gave the extraordinary motive force to the movement now inaugurated. As conversion, assurance, and individuality were the powerful and appealing principles of the Evangelical revival, so the sense of inheritance and of communion in one historic body belonged to the Tractarians.

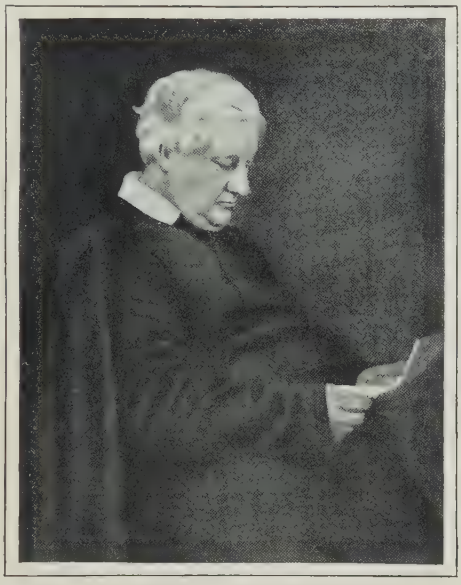
The history of the movement can only be briefly sketched. It acted first through the publication of a series of "Tracts for the Times," which were first popular explanations and appeals to the great theologians of the English Church, then lengthy and learned treatises on the chief doctrines of the Church which had seemed in recent years to be ignored. They had a large sale and a wide and increasing influence. Their work was aided by the issue of a number of pamphlets on the chief religious and political questions of the day, and by the influence of the poetry of Keble, of Newman, of F. W. Faber, and of Isaac Williams. But they were by no means universally welcomed. The "high and dry," as well as the Evangelical, school of Oxford dons were first cold, then bitterly opponent. The powerful party led by the revered and beloved Dr. Arnold regarded them with suspicion which gradually grew into rancorous condemnation. "It is clear to me," wrote Dr. Arnold to his friend and pupil Stanley, "that Newman and his party are idolaters." A counter-move began about the same time as the Tracts, from the Broad Church party (as it came to be called), to remove all tests at the University, particularly the signing of the Thirty-nine Articles by undergraduates, a requirement introduced 250 years before by Elizabeth's Puritan favourite, the Earl of Leicester.

The Broad Church Party.

Considerable influence in the direction of liberalism in theology was also exercised by the very interesting personality of the Rev. J. Blanco White, who in January, 1835, became a Unitarian.[1] He was the real founder of the modern Latitudinarian school in the English Church. Whately and Hampden were in different senses his pupils; Arnold and even Hawkins felt his positive influence, though less directly.[2] In 1836 the divergence between the two parties was made manifest by the strong opposition which greeted the appoint-

[1] *See* J. B. Mozley's "Essays." [2] Liddon's "Life of Pusey," i. 360.

ment of Dr. Hampden to be Regius Professor of Divinity at Oxford. So strong was the opposition to this appointment, from Evangelicals as well as High Churchmen, that the new Professor was deprived by the University of a large part of the rights and powers of his office. Gradually opposition to the Tracts became systematised, and charges of "Romanising" were freely made against their contents, especially after the



THE REV. F. W. FABER.
(*Brompton Oratory, South Kensington.*)

publication (after his death) of R. H. Froude's "Remains." On the other hand, Dr. Hook, who was doing an extraordinary work of evangelisation at Leeds, powerfully defended the Tracts.

In 1841 the opposition was brought to a head by the publication of "Tract 90," in which J. H. Newman, Vicar of St. Mary's, Oxford—the great preacher whose influence over undergraduates, and through them over a larger field, was inspiring and widespread—argued that the Thirty-nine Articles do not, historically or formally, contradict the formularies of the Council of Trent, and are not in necessary or absolute contradiction to the doctrines to which the Church of Rome is (in 1841) necessarily

Tract XC.

committed. Similar attempts had been made before, and there was nothing but the excitement of the times to render the tract significant of anything more dangerous than brotherly charity and a desire for the use of accurate theological language. But four Oxford tutors at once issued a protest against it, which was taken up by the Heads of Houses. The Tracts were disowned by the University authorities, and "Tract 90" was

JOSEPH BLANCO WHITE.
(*From his "Memoirs," edited by J. H. Thom.*)

condemned as evading rather than explaining the Articles. A long and exasperating controversy followed. Many of the bishops took fright and condemned the Tracts. The powerful influence of Mr. Keble and Dr. Pusey was exerted on behalf of Newman in publications whose honesty and learning could not be denied. Yet the tide turned strongly against the Tractarians. In 1843 Dr. Pusey preached a sermon on the Eucharist before the University, which was condemned with extraordinary haste and some disingenuousness by the Heads of Houses, and the author was suspended from preaching in

his turn. In 1843 Newman resigned his living of St. Mary's; and after two years' retirement at Littlemore, near Oxford, he was received into the Church of Rome in October, 1845. In 1841 by a State arrangement a bishop for the English and German congregations in Syria was consecrated by the Archbishop of Canterbury (Howley). The apparent recognition of Lutheranism and Calvinism implied in this, though the English

EDWARD BOUVERIE PUSEY, D.D., BY GEORGE RICHMOND, R.A., D.C.L.

(By permission of the Dean and Governing Body, Christ Church, Oxford.)

Church had given it no formal sanction, was a severe blow to the Tractarians. In 1844 Mr. W. G. Ward, Fellow of Balliol, perhaps the most original of the Tractarian party, published "The Ideal of a Christian Church," in which the Church of England appeared to be compared disadvantageously with the Church of Rome. The Heads of Houses determined on a further condemnation of Tractarianism. The Convocation of the University was summoned. Ward's book was condemned by 777 votes to 386. His degree was taken away by 569 to 511. A proposal formally to condemn "Tract 90" was stopped by the veto of the

Ward's Ideal."

The Crisis.

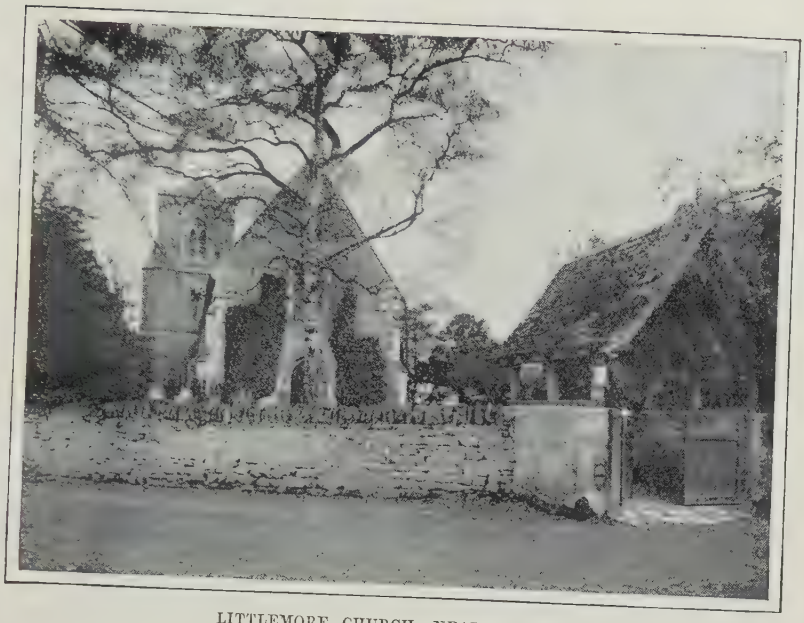
Proctors—Mr. Guillemard of Trinity, and Mr. Church[1] of Oriel. This was the crisis of the movement. It was on February 13th, 1845, that the condemnation took place. In September Ward became a Roman Catholic; in October, Newman. Many others followed. A new stage of the movement began from that moment. Of the chief leaders, Pusey and Keble remained firm, and won ever-increasing influence as the years went on. The cause was taken up and carried on boldly by a crowd of enthusiastic spirits, of whom some, it is true, deserted it as time went on, but the greater number remained firm in the English Church. Among these Manning, the Wilberforces, and Church, with Gladstone and Roundell Palmer[2] among laymen, exercised in different ways a powerful influence on the theology and the practical work of the English Church. The principle on which these men acted has been expressed by one who was perhaps the wisest of them all:—

"It was not the revival of the old Via Media; it was not the reassertion of the superiority of the English Church; it was not a return to the old-fashioned and ungenerous methods of controversy with Rome—one-sided in all cases, ignorant, coarse, un-Christian in many. It was not the proposal of a new theory of the Church—its functions, authority, and teaching, a counter-ideal to Mr. Ward's imposing 'Ideal.' It was the resolute and serious appeal from brilliant logic and keen sarcasm to reality and experience as well as to history, as to the positive and substantial characteristics of the traditional and actually existing English Church, shown not on paper but in work, and in spite of contradictory appearances and inconsistent elements; and, along with this, an attempt to put in a fair and just light the comparative excellences and defects of other parts of Christendom, excellences to be ungrudgingly admitted, but not to be allowed to bar the recognition of defects."[3]

Such principles, with different expression, animated the army of parish priests and University tutors who now carried on the teaching of the Tractarians. Dr. Pusey, in spite of censures and misrepresentation, continued to teach the doctrines of the Continuous Church, and by active beneficence and counsel aided in the founding of many new mission works for dealing with the social and religious difficulties of the time. Mr. Keble continued to write powerfully in favour of the principles of the movement, and lived universally respected in his country living of Hursley till his death in 1866.

[1 Afterwards Dean of St. Paul's.] [2 Afterwards Earl of Selborne.]

3 Church, "Oxford Movement," pp. 366–7.



LITTLEMORE CHURCH, NEAR OXFORD.

HURSLEY CHURCH AND RECTORY.

Two Great Churchmen.

If two men be selected as examples of the active work of the period, they would naturally be Dr. Hook, whose labours in the immense parish of Leeds gave an impetus to parochial work throughout England, and Samuel Wilberforce, who was consecrated Bishop of Oxford on November 30th, 1845. This great prelate, endowed with many popular gifts, with untiring energy and marvellous power of organisation and practical work, may be said to have created a new conception of the episcopal office. "According to him the bishop was to be as much the mainspring of all spiritual and religious agency in his diocese as a parochial clergyman is bound to be in his parish."[1] No less was he prominent in the business of the National Church, in Convocation, and Parliament, and in the encouragement of the great extension of missionary effort. That he was not always judicious, and that he had no claim to learning, would be admitted; but few would deny that he was the greatest prelate of the age.

JOHN BROWN. The Free Churches, 1815-1885.

THE history of nineteenth-century Nonconformity may most fitly begin with some account of the "Three Denominations," as they were called, represented by the three boards of Presbyterian, Independent, and Baptist ministers, which in 1727 were organised as a "General Body." From the time of the Revolution they had a sort of acknowledged position in the State with the privilege of approaching the Throne and presenting an address. Of these three the Presbyterians were at first the more numerous body, and were accorded precedence. They traced their origin back to the time of the Long Parliament, and are not to be confounded with the present Presbyterian Church in England, which had a recent origin from Scotland, and is one in doctrine as well as in polity with the Church of the north. The older community, while retaining the name Presbyterian, gradually drifted from their ancient theological positions into Arianism or Socinianism, preferring to call themselves Unitarians, and had for their leaders men like Dr. Priestley, Theophilus Lindsey, and Thomas Belsham. Outside London they were in the early years of the nineteenth century strongest in Liverpool, Manchester, York, Birmingham,

The Unitarians.

[1] "Life of S. Wilberforce," i. 344.

Norwich, and Bristol. Elsewhere their hold upon the people was but feeble. In 1830 their own organ, the *Monthly Repository*, candidly reported: "Our chapels are but thinly attended . . . Many of the old places amongst us are in a pitiable state. Of our own knowledge we can speak of some scores which scarcely show signs of life." But while Unitarianism has never had powerful hold of the common people, it has, on the other hand, well sustained its reputation for culture and

KEBLE'S RESTING-PLACE, HURSLEY CHURCHYARD, HANTS.

literary power, numbering among its adherents Priestley, Aikin, and Roscoe, Mrs. Barbauld, Joanna Baillie, and Crabb Robinson. Norwich Unitarianism was brilliantly represented by the Taylors, Martineaus, Starks, and Aldersons, who were worshippers at the Octagon Chapel, where also Mrs. Opie attended as a girl; and at Birmingham, the Hills, from whom came Sir Rowland, the Post Office reformer, were prominent supporters of the Presbyterian Meeting-house.

The Independents.

The Independents, the second of the Three Denominations, while agreeing with the Unitarians in repudiating all State control of religion, were at opposite poles from them in matter of faith and church polity. With the Methodists they he firmly to evangelical truth, but differed from them in main-

taining the autonomy of each separate church. Such church, they held, should consist only of spiritual persons, and being so composed has complete power of self-government, the officers and private members together making one corporate ecclesiastical body, not acknowledging any right of interference or control from without. Gradually, in the course of the present century, the descriptive name "Independent" has given place to that of "Congregational," the older term of the two, and the one that was used in the sixteenth century. It was indicative of a growing feeling in favour of a closer combination of the churches, which, without interfering with their cherished freedom and right of self-government, should bring them into closer fellowship with each other. Out of this feeling arose the association of Independent churches known as the Congregational Union of England and Wales, formed in 1832. The following year the Union adopted a declaration of faith, church order, and discipline, not as having authority over the churches, or as a standard to which assent should be required, but simply as a statement of the leading principles held by the denomination. During the nineteenth century the Congregationalists made steady advance in numbers, having at the end of that period 4,594 churches and mission stations; also in the possession of improved church buildings and schools; in the development of their collegiate system for the training of ministers; in enlarged missionary operations both at home and abroad; and in the creation of various benevolent and educational agencies for their people. Many of their ministers, of whom there are about three thousand, have exerted an intellectual influence on the community at large. Heads of colleges, such as Dr. Pye-Smith, Dr. Vaughan, Dr. Halley, and Henry Rogers have been recognised leaders in the world of thought; while preachers like Richard Winter Hamilton, James Parsons, Dr. Raffles, John Angell James, Dr. Leifchild, Thomas Binney, R. W. Dale, and Alexander Raleigh acquired enduring reputation far beyond their own borders.

The Congregational Union.

The Baptists.

The Baptists, the third of the Three Denominations, differ from the Congregationalists simply on the question of the mode and subjects of baptism. They also have come into a brotherly federation known as the Baptist Union, and have been growing in numbers and influence as the century has

proceeded. Like their Congregational brethren, too, they have had names among their ministers held in deserved honour by the Universal Church: William Carey, the pioneer missionary; Robert Hall, the brilliant preacher; Andrew Fuller, Charles Haddon Spurgeon, Alexander Maclaren, and many more who

JOSEPH STURGE.
(*After Alexander Rippingille.*)

have exercised a powerful formative influence over the religious life of the community.

The Wesleyans.

Passing beyond the historic denominations just referred to, we come next to the powerful society known as Wesleyan Methodism, which, born in the eighteenth century, went on developing and consolidating in the nineteenth. Its internal history is largely that of a struggle for greater freedom and increased representation in the government of the Society on the part of the laity. Neither Wesley nor the other early

leaders in Methodism believed in democratic government, and continued resistance on their part to the introduction of the lay element into Conference led to one secession after another, forming sister communities holding the same doctrines, and having substantially the same polity, but working with more of breadth and democratic freedom. In one form or another the question of the place of the people in the government of the church came to be agitated till 1877, when the ministerial and lay elements were harmonised by a system of lay representation, which provided a mixed Conference, consisting of about 240 ministers and 240 laymen, in whom the government was ultimately vested.

In spite of several secessions and occasional disasters Wesleyan Methodism has shown marvellous vitality, elasticity, and resource. In 1822–3 a great revival in Cornwall added more than 2,000 members to the Society within a few weeks. Ten years later Conference reported the accession of 24,000 new members in one year in Great Britain and Ireland, and nearly 2,000 more on their foreign stations. Even when the Reform agitation of 1849 had entailed serious discord and heavy losses in numbers, the Society not only soon rallied itself but rose stronger than before. In the course of the following years enlarged congregations called for enlarged church accommodation, week after week bringing intelligence from almost every part of the Connexion of new chapels erected or old ones increasing their accommodation At the centenary celebration of 1839 the people raised for colleges, mission-house, and other buildings no less a sum than £230,000; at the jubilee of their Foreign Missionary Society in 1863 they raised £250,000 more, and in 1878 a further Thanksgiving Fund of £290,000. Their numbers in Society also, as well as their contributions, in spite of secessions and fluctuations, rose steadily from decade to decade; so that while in 1816 they had in Great Britain and Ireland a membership of 241,319, in 1843 that membership had reached a total of 451,286—in other words, had nearly doubled itself.

The principal offshoots from the Wesleyan system are the Methodist New Connexion and the Primitive Methodists. The former of these was a secession led by Alexander Kilham in 1797, in which there were two points at issue: the relation

Dissentient Methodists: The New Connexion.

of the Wesleyan Society to the National Church, and the place of the laity in the internal government of the Society. At first the Methodist preachers were not allowed to administer the sacraments, inasmuch as Wesley regarded the community he had founded simply as a Society connected with the Church of England; and for the same reason services were not to be held in the Methodist chapels at the same hours as those in the parish churches. These restrictions were felt to be

ALEXANDER KILHAM.
(*By permission of the Methodist New Connexion.*)

increasingly irksome and inconvenient, and those who seceded with Kilham contended for the right of the people to hold their services at times convenient to themselves, irrespective of the services in the National Church; and also for their right to receive the sacraments at the hands of their own ministers, and in their own places of worship. These points were conceded by Conference shortly after the death of their founder, but the further constitutional question of the place of the laity in the government of the Society continued to be the subject of agitation for three-quarters of a century longer. The seceding members of 1797 maintained the right of the people to a representation in the district meetings and in the

Annual Conference, and so to have a voice in the government of the Society and in the appropriation of its funds; they claimed also on behalf of the general body the right to vote in the reception and expulsion of members, in the choice of local officers, and in the calling out of candidates for the ministry.

Primitive Methodists.

A much more important community arising out of secession was that of the Primitive Methodists, which took its rise in 1807. Two earnest-minded men in Staffordshire, Hugh Bourne and William Clowes, joined the Methodists, and caught the spirit of revival. They had read of American Camp Meetings, and resolved to hold a similar gathering at Cop Mow, or Congleton Edge, an elevation of millstone grit dividing Staffordshire from Cheshire. The scene was memorable from the excitement produced: other meetings followed, and the excitement spread. Methodist preachers disapproved of the proceedings, and Conference passed a minute to the effect that even supposing such scenes were allowed in America, in its judgment they were highly improper in England, likely to be productive of considerable mischief, and were to be discountenanced. Hugh Bourne took no notice of the inhibition thus pronounced, but went on holding camp meetings as before; consequently, in the following June he was expelled from the Society for violating Methodist law. Undeterred by this excommunication, Bourne and Clowes instituted a society of ten members, and met in class in 1808. In 1811, when their membership did not number more than 200, they built a chapel and determined to call themselves Primitive Methodists. With admirable self-devotion they went to work among the poorest and most degraded of the people in town and village. They had not a college-bred man among them; their preachers endured the sorest privations without a murmur; the world despised them, and as they heard them preach and sing called them Ranters; still they grew, sweeping over England and penetrating everywhere. Like the preaching friars of the Middle Ages, wherever they found an opening they set up a service, and anything was good enough for a pulpit—a wagon or a cart, a chair or a heap of stones. Driven from one place they escaped to another, singing as they went. The persecution they endured was disgraceful. The rabble knocked down the preachers and threatened with oaths to take their lives. This

persecution, however, only furthered the movement: congregations were gathered; class-meetings were held in which many who had lived abandoned lives told with tears how God had lifted them out of the horrible pit and the miry clay; and men who used to fight together sat down at the love-feasts of the Society, and one after another told the story of a lifetime. It was a memorable movement. The adherents were nearly all working people—fisher-folk, persons employed in mills, collieries, and mines, or as labourers on the land—and the Society grew in a wonderful way. By the end of the century the ten members of 1808 had grown to 200,000; they had 4,000 chapels and 16,000 local preachers, and the good accomplished among the poorest and the lowliest is simply incalculable.

The Society of Friends.

Other less numerous communities, such as the Society of Friends, the Moravians, the Irvingites, the Plymouth Brethren, and the adherents of the New Jerusalem or Swedenborgian Church, can only be briefly touched upon in the space at our disposal. The Society of Friends has in the course of the period now under review steadily declined in numbers, and was further weakened by the Hicksite controversy, which began in America in 1825, and in 1829 was creating anxiety among the Quakers on this side of the Atlantic. Still, in the manifestation of all the social virtues, and in the advance of all philanthropic movements, they have exerted an influence out of all proportion to their numbers as a denomination. Honoured names have been among them—William Forster, the Gurneys of Earlham, Thomas Clarkson, the Sturges, Benjamin Seebohm, John Dalton and William Allen, Joseph Lancaster and Joseph Fox; these and many more have stood firmly for justice and righteousness, for the advancement of science and freedom, and for the promotion of education and Christian philanthropy.

The Moravians.

The Moravians, or, as they describe themselves, the *Unitas Fratrum*, the United Brethren, trace back for centuries to John Huss and the Bohemian Reformation; but were as a denomination first established in this country by Count Zinzendorf in 1732. In 1800 they had settlements in Bedford, Bristol, Dukinfield, Bath, and Devonport, these settlements being really small colonies, "the Brethren" living together in village life, with schools and industrial institutions, under the govern-

ment of their own Church. Their ecclesiastical polity is somewhat peculiar; for while they have bishops, their government may be described as Presbyterian rather than Episcopal, inasmuch as Synods, provincial and general, are the ruling powers, the provincial synod directing provincial affairs and legislating in detail according to principles laid down by a General Synod. While their numbers have been small, and their churches not more than forty in this country, it is their great honour to have been the pioneers in missionary enterprise in Greenland, Labrador, the West Indies, South Africa, and among the aborigines of Australia. At the beginning of the century, out of 170 ministers 100 were missionaries, and, taking their whole community, one in every *sixty* members is a missionary as compared with one in 5,000 in the other Protestant Churches generally. They had also missions to the lepers before Père Damien was born, for in 1818 the Brethren undertook a settlement for these unfortunate sufferers in the African valley of Hemel en Aarde. They are not an increasing community; their old congregations and their old settlements continue to exist, but make but little progress.

The Catholic Apostolic Church, as the Irvingites designate their own community, took its rise out of the ministry of Edward Irving, originally of the Scottish Presbyterian Church. Described by De Quincey as by many degrees the greatest orator of his time, and by Carlyle as "the freest, brotherliest, bravest human soul mine ever came in contact with," he came to the conviction that the phenomena connected with the descent of the Holy Spirit at Pentecost might, if men had faith, be repeated in our own time, and the miraculous gifts of the primitive Church renewed. A new church, necessitated by his great popularity, had been built for him and opened by Dr. Chalmers in 1829, and in 1831 strange scenes were witnessed and supernatural voices supposed to be heard. In 1833 he was excommunicated by the Presbyterian Church, of which he was a minister, and on his return to London he officiated as an angel in the congregation of the Catholic Apostolic Church. This Church, which was the outcome of Irving's peculiar views, laid great stress on the Ecumenical Creeds of Christendom, and held to the belief in our Lord's Second Coming before the Millennium. It was mainly distinguished by its fourfold ministry of apostle, prophet, evan-

CONVENTION OF THE ANTI-SLAVERY SOCIETY, BY BENJAMIN ROBERT HAYDON.

(*National Portrait Gallery.*)

gelist, and pastor, the apostle taking precedence of the rest, claiming to confer the Holy Ghost by the laying on of hands, to communicate to the Church mysteries revealed to himself, and to decide matters of discipline and order. There were also deacons to manage temporal affairs, while the payment of tithes or tenths of property was the source of church revenue. The system grew to be as churchly in its way as the churches of the East and West, and as æsthetic in its ritual. Seven congregations were commenced in London made up of gathered converts, one of these taking high rank in later years within the walls of the ornate cathedral built in Gordon Square. The most distinguished of their adherents was Henry Drummond, M.P., a man of bold individuality, having the courage of his convictions. At his seat of Albury Park, which was a gathering place for students of prophecy, he built in his grounds a place of worship for the new denomination, the decorations of which were extremely rich, and in which the chair of the angel, or bishop, occupied by Lord Sidmouth, stood on the north side of the chancel.

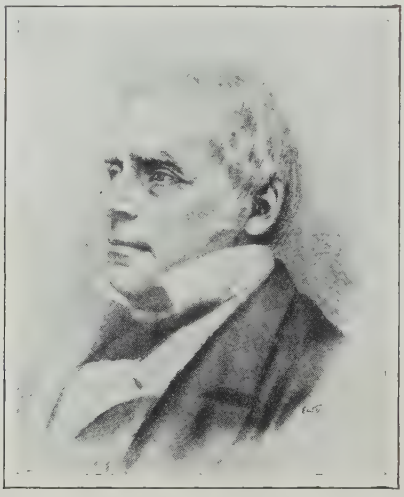
Photo: Walker & Cockerell.
EDWARD IRVING, BY JOSEPH SLATER.
(*National Portrait Gallery.*)

The Plymouth Brethren.

Between the years 1820 and 1830 a new form of religious conviction and profession rose against the formalism and ecclesiasticism of the time, which came to be known as Brethrenism, and from an early place of meeting, Plymouth Brethrenism. Mr. Groves, a young man of ardent piety preparing for the Episcopal ministry at Trinity College, Dublin, came to have doubts as to the course he was taking, and in consequence gave up the study of general literature, sacrificed his property, and cast himself on Providence. He and some others of like mind came to the conclusion that all existing ecclesiastical systems were wrong, that Christendom was in confusion, and that the day of the Lord was at hand. They also held that believers in Christ should frequently meet together to break bread inde-

THE CHANCEL, CATHOLIC APOSTOLIC CHURCH, ALBURY PARK.

pendently of any clerical ministration. Mr. Groves had for his associate John Nelson Darby,[1] a man of considerable learning and force of character, but somewhat narrower and more exclusive than himself. It is not easy to convey any very distinct idea of the principles adopted by the Brethren, they having published no confession of faith and issued no declaration of ecclesiastical order. While professing to take the New Testament as their rule, their testimony was more negative



JOHN NELSON DARBY.

(*From a drawing, by permission of Colonel Le Pelley.*)

than positive. They protested against worldliness, and especially against Churchism, esteeming Episcopalianism, Presbyterianism, and Independency to be all alike wrong, the Establishment being Apostasy, and Dissent no better. Their main positive manifesto is that the Lord is at hand, and that till He comes the Holy Spirit is the present sole and sufficient sovereign in the Church.

Swedenborgianism may be said to have first come within the circle of English ecclesiastical life as the New Jerusalem Church, about 1810, when a society was formed for circulating

[1 For a striking account of him in early life, *see* F. W. Newman, "Phases of Faith," p. 27 *seq.*]

Swedenborg's works. As far back, however, as 1754 the Rev. J. Hartley, a Northamptonshire clergyman, published treatises and translations on the subject, and the Rev. John Clowes, of Manchester, who died in 1831, wrote works in defence of the system, though he still remained a clergyman of the Church of England. At the religious census of 1851 the Swedenborgian places of worship had a total of 11,465 sittings, and 4,846 persons in attendance. The system rested on the peculiar claim of its founder to have been in the spiritual world and to have talked with angels face to face in their own habitations. His books are the revelations of what was thus professedly communicated to him. This remarkable man, of noble character and educated mind, presents a strange mixture of fanaticism and cool reasoning. Holding to a mystic meaning in Scripture, of which he alone had the key, and to the idea that everything in the world is full of *correspondences*, he thought that the true explanation of Scripture will proceed beyond the literal to the spiritual, and recognise the correspondences everywhere existing between the three worlds of Nature, of the True, and of the Good.

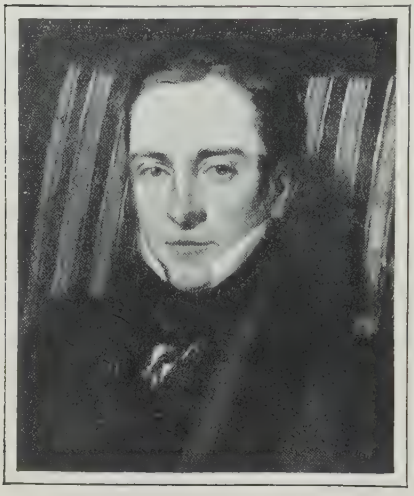
The Salvation Army, though coming into existence during the period covered by this volume, really received its principal developments later than the year 1885.

H. D. TRAILL. Literature.

A Brief Retrospect.

Several years before the commencement of the period whereon we now enter, the burst of song with which the eighteenth century had closed and its successor opened was finally hushed, and by 1832 it may almost be said that even its echoes had died away. Byron had been eight years dead, Shelley ten, and Keats eleven. Scott's muse had been silent for well nigh twenty. The best that was in Wordsworth had been uttered. Coleridge had almost wholly fallen silent, and the genuine, if not very opulent, vein of poetry which his son Hartley (1796–1849) had inherited was denied its full development in a nature marred by weaknesses which were themselves also, unhappily, paternal bequests. Poetry of respectable, if of minor merit, is not wanting, it is true, to the literature of this decade, but none of it, whatever its quality, can be regarded as in any sense carrying on either the lyrical tradition of the first three of the above-

named poets or the poetico-romantic tradition of the fourth. Their performances were almost all in the nature rather of adventures in new directions than of progress along the path marked out by their predecessors. In only one of them, Thomas Hood (1798–1845)—and in him only in those early pieces which public neglect compelled him to abandon for the essentially inferior work of burlesque verse—is there to be noted any deliberate endeavour to follow in the footsteps of the earlier masters. Of the two other poets whose names, though held in very unequal estimation in their life-time, deserve alike to be mentioned even in a brief summary of this kind, one and the greater in original genius lived too short and undisciplined a life to justify any attempt to fix his place definitively in the literature of his age. But both the single work which Thomas Lovell Beddoes (1803–49) produced in his short life of less than fifty years and the series of works which were the yield of Henry Taylor's (1800–86) long life of nearly ninety years were dramatic in form. And though the latter attained to a certain measure of reputation during the decade which we are considering (his masterpiece, "Philip van Artevelde," was not published till 1834), whereas the former remained in complete obscurity for many years after his death, it cannot be said that even Taylor himself was in any sense popular. Perhaps the only poet who, during this period, made any deep impression on the public mind was Philip James Bailey (1816–1902), whose long philosophical poem of "Festus," published in 1839, has preserved such a measure of literary life as to justify the republication of a "Jubilee" edition of it in 1889.



THOMAS HOOD (*Portion of Painting*).
(*National Portrait Gallery.*)

If the honours, such as they are, of popularity can be claimed

at all for any poetry, or so-called poetry, during the period in question, they must be taken to have descended in the female line, for probably the most widely read writers of verse at that period were Felicia Hemans (1793–1835) and Letitia Elizabeth Landon, better known to her contemporaries under the initials "L. E. L." Profound mediocrity is the note of both ladies, and their smooth and facile numbers—varied in the case of the former only by a few pieces of higher merit—would, in these days of abundant and admirable versification, not infrequently rising to the level of genuine poetry, pass quite unnoticed. That either of these two elegant but wholly uninspired songstresses should have found acceptance by a public in whose ears the music of Keats and Shelley was still echoing is a melancholy proof of the essential worthlessness of popular fame.

Popular Poetry in 1830.

Poor, however, as was the quality of the verse produced during these years, it must be admitted that the first efforts of the new poet who was destined to become the glory of his age revealed no striking superiority of gift. In 1826 appeared the small but now historic volume entitled "Poems by Two Brothers," a collection of weakly imitative lyrics, from which no one certainly would have guessed the illustrious future which lay before one of the joint authors, or the genuine, though of course far slighter, poetic inspiration which was to find utterance in the other. It is not now possible to distinguish the share of Alfred Tennyson (1809–92) in this early venture from that of Charles; but the fact is the less to be regretted since the dead level of mediocrity is maintained uniformly throughout, and in no one number of the volume can the most sympathetic criticism detect the faintest individuality of touch. There are echoes of Byron and of Scott; there is even an echo of Moore;

Photo: Walker & Cockerell.

FELICIA DOROTHEA HEMANS, BY ANGUS FLETCHER.

(National Portrait Gallery.)

The Tennysons' Early Efforts

but the unmistakable music of that voice which was to charm two generations of Englishmen, and to retain its sweetness and power unimpaired until, nearly seventy years later, it was stilled for ever, is nowhere to be heard. Never since Apollo took service with Admetus has the godhead of an Immortal been so effectually concealed.

Alfred Tennyson's Earliest Book.

It was not till 1830 that Tennyson again broke silence, nor can it be said that even in the volume published by him in this year the promise of his future greatness stood as yet assured. For although in the collection entitled "Poems Chiefly Lyrical" are to be found a few such masterpieces as "Mariana," "The Dying Swan," "The Merman," and "The Mermaid," yet in the collection of poems published two years later, when the poet was still only in his twenty-third year, he reached a level of lyrical perfection, on which he stood side by side, not only with Keats and Shelley, but with the greatest English lyrists from the Elizabethan era downwards, and above which he did not, as indeed it was inevitable that he should not, rise during the sixty years of creative activity that still remained to him. One has but to mention the names of "The Lotos Eaters," of "Œnone," of "The Palace of Art," and of "The Dream of Fair Women," in order to remind oneself how early the greatest, the most individual, and most lasting triumphs of the poet were achieved. For of but one among these four masterpieces can it be said that it shows any lingering traces of that imitative stage through which even poets of the most independent and original genius sometimes have to pass. "The Palace of Art" is no doubt strongly reminiscent of Keats, but in "The Lotos Eaters" a note new in English lyrical poetry was struck, just as in "Œnone" the young poet showed that the possibilities of the blank-verse measure had not been exhausted by Milton, and stamped it anew with a rhythm of his own which is more fluent and flexible, more varied and versatile—though unfortunately, too, more easily imitable and more copiously imitated—than that of his great predecessor. In 1842 Tennyson added to the list of his published poems, among many others, his great philosophical poem, "The Two Voices"; the romantic, but in sentiment slightly commonplace, "Locksley Hall"; the two fine blank-verse pieces, "Ulysses" and "Godiva"; and the splendid fragment of the "Morte d'Arthur." His detractors in the press

were now silenced, and his rank as the foremost of living English poets was assured to him.

Much behind him in reputation stood in those days a poet who, in the closing years of his life, was to challenge an almost **Browning.**

ALFRED TENNYSON IN 1844, BY SAMUEL LAURENCE.

equal place. Robert Browning (1812–89) was born three years after Tennyson, and was about as much his junior on the Muse's calendar. "Pauline," his first poem, appeared in 1833, a work which has not, even now in the day of his fame, found many admirers, and was followed two years later by "Paracelsus,"

a poem in the dramatic form and of far more remarkable quality, exhibiting, indeed, both in matter and manner, nearly all the most characteristic points of its author's genius. Though as profoundly and unpoetically analytic as anything that he ever wrote, it is redeemed by passages of beauty which are almost wholly wanting to the relief of "Sordello," published in 1840, perhaps the harshest in expression and obscurest in theme of all the poet's productions. It may be conveniently dwelt upon for a moment longer here, as representative of an aspect of Browning's poetry, which it retained almost unaltered to the last. Perfect lucidity and simplicity, a sufficient charm of music and imagery, and a passion and power of dramatic insight unsurpassed, if equalled, either by predecessor or contemporary, were often at his command and were many a time displayed by him in his shorter lyrical pieces. But during the whole of his sixty years of poetic activity he habitually disdained to lend any of these attractions to his longer blank-verse poems. To the last it was the poet's whim to lead his reader into unlighted caverns of thought strewn thickly with obstacles of language, and to leave him to grope and stumble his way through them as best he might.

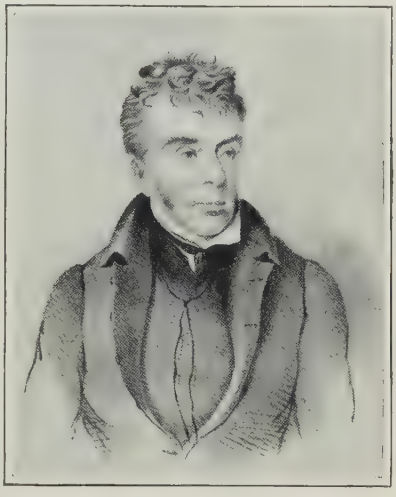
Up to the end of the period covered by this chapter Browning had published scarcely anything—unless we except a few of the pieces appearing in the collection entitled "Bells and Pomegranates," issued in parts between 1841 and 1846—which gave promise of his lyrical as distinct from his analytic and philosophising powers; and the accomplished poetess whom he married in the year with which this period closes had not then attained that fame which for nearly another twenty years was to eclipse that of her husband. Between 1832 and 1846 there were no poets, with the exception of the female mediocrities abovementioned and perhaps also Mr. Philip James Bailey, who contested Tennyson's monopoly of public attention as a poet. The name of Sir Aubrey de Vere (1788–1846) is alone worthy of mention as a poet of true charm and refinement; for that of Ebenezer Elliott, the so-called "Corn Law Rhymer" (1781–1849), though he probably had more of the "root of the matter" in him than any man living at that time save Tennyson and Browning, is almost necessarily excluded by the self-chosen narrowness of his themes and by their fiercely polemical treatment from any

Minor Poets.

prominent place in such a chronicle as this. One might almost wish that the Corn Laws had been repealed twenty years earlier, in order to see how it might then have fared with Elliott's poetic development, were it not that in that case he would probably never have sung at all.

Prose: Macaulay.

The prose of this period was as remarkable in point of accomplished work as its poetry was rich in promise; for in the course of its fourteen years it witnessed the rise almost to the full height of their fame—and perhaps quite to its summit in one case—of two of the greatest prose writers and one of the two greatest novelists of the century, in the persons of Macaulay, Carlyle, and Dickens. The first of these had already made his mark in periodical literature before the period began. Macaulay (1800–59) was indeed a contributor to the *Edinburgh Review* in the second decade of the century, and had already elicited the well-known and often-quoted eulogy of Jeffrey on the novelty and brilliancy of his style. The essay on Milton appeared in 1825, and thenceforward for the space of twenty years Macaulay contributed to the great Whig periodical a series of articles which, although, according to the tradition then and still observed by the *Review*, ostensibly literary criticisms, were in many or most cases elaborate biographical studies of statesmen, sovereigns, philosophers, and men of letters, or comprehensive surveys of past periods of history. They occasionally suffer in some measure from the circumstances of their production; and the manifest intrusion of political bias (or, as in one famous case, of downright personal animosity) into some of them detracts from their value; but, excluding a few of the more or less "occasional" articles—such as that on "Southey's Colloquies,"



EBENEZER ELLIOTT.
(*From the engraving prefixed to his Poems*, 1840.)

"Essays."

"Croker's Boswell," "Gladstone on Church and State," and the celebrated onslaught on Mr. Robert Montgomery—the remainder may be safely ranked among the enduring monuments of English literature. In the essays on Lord Bacon and Sir William Temple, in the two brilliant sketches of the elder Pitt and his contemporaries, and, above all, in the magnificently dramatic presentment of the administration and the trial of Warren Hastings, Macaulay's literary genius—with all its brilliant fervour of rhetoric, its consummate mastery of intricate narrative, and its lucid, if too often prejudiced, analysis of character and motive—is seen at the height of its power. His activity of production was uninterrupted even by those four years of official service in India, during which he acquired that local knowledge and that familiarity with Oriental life which stood him in such good stead in the last-named essay; he continued to display it as untiringly after his return to India in 1838.

"Lays of Ancient Rome."

Some four or five years later, in 1842 and 1843, he made his first appearance as a poet with the "Lays of Ancient Rome"—a work which has been variously judged by critics, but which, though not attaining to and indeed not aiming at the simplicity of the ancient ballad poetry, is animated, especially in its battle-pieces, by a sustained ardour which it would not be easy to match anywhere save in the romance poetry of Sir Walter Scott.

"History of England."

After a short interval of Parliamentary and official work, Macaulay lost, in 1847, his seat for Edinburgh, and a year afterwards published the first two volumes of his "History of England," thus invading a field at that time occupied almost solely by his older contemporary—a fellow-Whig, Henry Hallam (1777–1859), one of the most learned and judicious, but also one of the coldest and least inspiring, of writers. Its third and fourth volumes appeared in 1855, and two years later its author was raised to the peerage. He died in 1859, leaving this monument of his genius uncompleted. The brilliancy of the essayist displays itself with undiminished lustre in the historian; and there are passages in the history not surpassed even by the most eloquent pages of the essays. But the constitutional defects of the critic and biographer are still more conspicuous in the writer of history. The vehement prejudices which occasionally distorted his view of the philosopher or the man of letters who had been the subjects of

his study perpetually disable him from dealing fairly with the statesman or the policy with whom and with which it was now his business to deal; and though these prejudices never indeed betray him into deliberate deviations from ascertained truth, they constantly tempt him to exaggerate or to minimise the effect of historical evidence, and—what approaches

Photo: Walker & Cockerell.
LORD MACAULAY, BY SIR FRANCIS GRANT, P.R.A.
(National Portrait Gallery.)

nearer still to positive untruthfulness—to build up a theory of the character and motives of individuals upon the basis of a series of mere presumptions which the reader is allowed, if not encouraged, to mistake for facts.

His Influence on English Prose.

The place, however, of Macaulay, elevated as it is among English men of letters, is less commanding than his rank among those who have influenced the history, as well as enriched the possessions, of our national literature. No writer of any age—not Dryden, or Johnson, or Gibbon—has left a deeper mark than Macaulay upon English prose. It is hardly

too much to say that his influence is visible, to an extent amounting sometimes almost to actual mimicry, in nine out of every ten men who followed the craft of literature during the period immediately succeeding his death; and though it has of late been waning somewhat before the attraction of newer models, it is still to be quite plainly traced. Macaulay's style had, in fact, that combination of individuality and adaptability which is the secret of any great prose-writer's influence upon his time. Accomplished, attractive, and even great as such a writer may be, his style must have a new and personal stamp, or it will not arouse the desire or beget the unconscious trick of imitation; yet with all its originality it must be such as will adapt itself to the needs of many varieties of literary temperament, many different degrees of literary power, and to the capacities of all kinds of literary material, or the imitator, unconscious as well as conscious, will, with or without knowing, abandon it for some more useful model. Macaulay may, as Professor Saintsbury thinks, have taken something from Hazlitt in the formation of his style, and "not a little from Gibbon"; and undoubtedly there is a family resemblance in what has been irreverently called the "see-saw of the sentence" in both writers. But Macaulay shortened the sentence, sharpened the antithesis, and familiarised the language; and in so doing made it possible for a host of successors to cultivate point and epigram while avoiding the appearance of sham and elaboration, and taught them to lend to rhetoric which is in reality quite as artificial as Gibbon's an air of the natural and sincere. At a time when the genius of English prose, with the fascinating but dangerous models of De Quincey and Wilson before her, might easily have run into somewhat loose-zoned excesses of the luscious in phrase and colouring, Macaulay gathered up her garments and girt her loins. The reaction towards a greater restraint and austerity of style which he thus set on foot was needed and was healthy, and it has not yet quite spent itself even now, when Macaulay has been over forty years in the grave.

Carlyle.

Widely different in literary manner, and infinitely less influential as a literary model, stands the other famous essayist and historian, if either name can be properly given to one whose essays were usually poetic and satiric rhapsodies, and his

history a series of brilliant dramatic monographs, interspersed with prophetic sermonisings on the enigma of existence and the nature, lot, and destiny of man. Thomas Carlyle (1795–1881), the son of a Scotch stonemason, was originally intended for the Church, which he abandoned first for the drudgery of an ushership in various Scotch provincial schools, and finally,

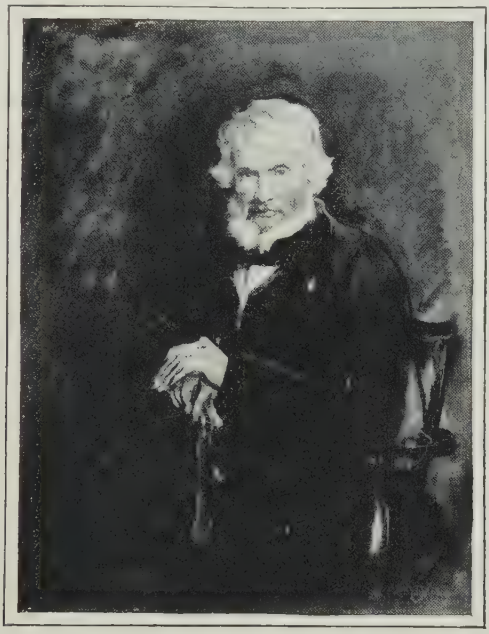


Photo: Walker & Cockerell.

THOMAS CARLYLE, BY SIR J. E. MILLAIS, BART., P.R.A.
(*National Portrait Gallery.*)

after an interval of private tutorship, for the less monotonous but more precarious employment known to an elder generation as "writing for the booksellers." Between his twenty-fifth and his thirty-fifth years he did much miscellaneous work in the way of translations and contributions to periodicals, but the first production which brought him into notice was the strange rhapsody, as it was then considered, to which he gave the name of "Sartor Resartus," and which, under the form indicated by its sub-title of "The Life and Opinions of Herr Teufelsdröckh," is in fact a sort of spiritual autobiography of Carlyle

"Sartor Resartus."

himself. Though accepted courageously enough, and published in a serial form in their miscellany by the conductors of *Fraser's Magazine*, its success, as may be imagined, was not immediate; nor was it until after the publication of another and more popular work that it won its way to anything like general appreciation. But from the first it caught the attention of the few independent critics and thinkers who were able to penetrate through what seems to an unfamiliar eye its uncouth and forbidding style to the core of wisdom, humour, and poetry that lay within. In these qualities, apart or in combination, it has been held by many—and the opinion, though not incontrovertible, is strongly founded—to be richer than any other of its author's works.

"The French Revolution."

In the year 1837 appeared the "History of the French Revolution," and by this work the place of Carlyle in English literature was permanently fixed and obtained general recognition. The dramatic vigour of its narrative, the vivid force of its portraiture, the reach and grasp of its generalisations, and the brilliancy and power with which the historian's theory, inadequate and biassed as it may have been, of the great catastrophe was supported, were irresistible. Later researches have corrected many of Carlyle's statements of fact; a wider survey of the social and economic conditions of the revolutionary France has revealed the limitations of his own historical outlook, and his too narrow conception of the causes of the events with which he was dealing; but the supreme artistic value of this magnificent work remains unimpaired. It remains, and will always remain, an imperishable monument of the power of literary genius in enabling the average human imagination to realise, with an intensity which would otherwise have been impossible to it, one of the greatest and strangest dramas that have ever been enacted on the human stage.

Lectures and Essays.

The lectures on "German Literature," on "The History of European Literature," on "Revolutions," and on "Heroes and Hero-worship," followed in pretty rapid succession, and were followed by the collection and publication of the "Miscellaneous Essays," the volume on "Chartism," and the remarkable series of political studies contained in the volume entitled "Past and Present," and published in 1839. And in the last year but one of the period with which we are dealing there appeared

THE ATTIC STUDY, CARLYLE HOUSE, CHELSEA.

(By permission of the Committee of Management of the Carlyle House Memorial Trust.)

"Cromwell." another, the third of the three great works which stand at the head of Carlyle's productions, "The Letters and Speeches of Oliver Cromwell"—a pious, and to a considerable extent successful, attempt to rehabilitate the memory of the great Protector, which revealed in a fulness only to be surpassed in the vast enterprise of his later life Carlyle's untiring industry in the collection of materials and the singularly acute insight with which in certain circumstances he could handle them.

Carlyle's Place in Literature. In dismissing for the present this most powerful and original of writers a word must be said of the place which he occupies in English letters. It is in no sense, as was Macaulay's, that of a model and exemplar, or of a contributor to the formative influences by which the future character of a national prose is determined. On his first appearance as a writer there were those who thought or rather feared otherwise, and who augured the gravest danger to English prose from the example and influence of a style so "barbarous," as it seemed to them, so widely deviant from accepted models, and so rebellious from classical canons as was that of Carlyle. Time has shown, however, that these fears were exaggerated, and that, as might indeed have been expected, a literary manner so incapable of adaptation to the uses of the average writer—in whom alone one must mainly look for the influences of contemporary models—would never be widely imitated except for purposes of deliberate parody. Accordingly, while no one, perhaps, has been so frequently or successfully parodied in the course of the last half-century than the author of "The French Revolution," there is no writer of his power and popularity who has had fewer conscious or unconscious imitators as distinct from parodists. Perhaps the reason is that unconscious imitation of so marked a manner would be difficult almost to the point of impossibility, and that to imitate it consciously, and at the same time with a serious intent, would be as nearly impossible for anyone having any consciousness of the absurd. Carlyle, it is true, was himself accused in his early days of being, so to speak, his own imitator — that is to say, of deliberately following out a deliberately invented scheme of literary eccentricity. His peculiarities of manner, these accusers declared, were not

natural to him; they were affected of set purpose as a means, and an unworthy means, of arresting public attention. Ample proof of this was to be found, they alleged, in the fact that in his earlier pieces Carlyle wrote, as they put it, "just like anybody else."

A fairer criticism however, will lead one to the conclusion that it was not his earlier manner—as displayed in the periodical to which he contributed at the outset of his career, and for the readers of which he was bound (and no doubt editorially reminded often enough) to put restraint upon himself—but his later manner which was really natural to him. If the style is the man, it is not in "The Life of Schiller," but in "Sartor Resartus," that we must look for the real Carlyle. It was in the style that he adopted, or rather mounted, for himself in "Sartor" —with its formless sentences, its abrupt breaks and harsh inversions, its strange metaphors and its fantastic vocabulary—that he found the adequate, and doubtless the only adequate, expression of his rich and varied genius. For him, as has been said in a recent study of his literary characteristics—for Carlyle, "with his throng of commanding faculties—his fiery eloquence, his rugged pathos, his grim and caustic humour, his unrivalled talent for word portraiture and picturesque description—all struggling, sometimes almost simultaneously, to express themselves, there was but one possible language—the Carlylese. And whatever may happen to the 'claim of style,' whatever may become of the 'dignity of history,' we may be sure that so long as eloquence and pathos, and humour, and vivid portraiture, and picturesque description retain their power to move and delight mankind, Carlyle's place in the admiration of posterity will be secure."

Dickens.

Far foremost among the novelists of this period, and, in certain respects, easily chief of all the writers of fiction of the Victorian era, stands Charles Dickens (1812–70), the greatest of whose works, with a single exception, were published during the nine years with which the period closes. "The Pickwick Papers," which, originally commenced in 1836, grew rapidly under its author's hand into a masterpiece of broadly farcical comedy, appeared in its completed form in 1837, and was succeeded in the following year by "Nicholas Nickleby." "The Old Curiosity Shop" and "Barnaby Rudge" made their appearance in 1840–41,

[1832

and "Martin Chuzzlewit" in 1843. The first work of this brilliant series established the popularity of Dickens, and revealed his extraordinary gift of humour to almost, if not quite, its full extent; but it can hardly be said that the range and variety of his powers were demonstrated until the completion of the series. There was nothing in the boisterous fun of "Pickwick," or even in the extravagant, if droll, caricatures with which "Nicholas Nickleby" abounds, to foreshadow the astonishing vigour of dramatic narrative which animates the story of the Gordon Riots in "Barnaby Rudge," or the mastery of genuine, if sometimes recklessly unjust, satire which informs the American scenes in "Martin Chuzzlewit." Still less are there any traces in the earliest books of that purely literary quality which, in spite of Dickens's extensive ignorance of, and, as it should seem, profound contempt for, accepted literary models, no competent critic can fail to recognise in the work of his prime.

His Humour.

Of his humour it is singularly difficult for criticism—as many unsuccessful attempts have proved—to render a strictly just account. In some of its aspects it is as easy to undervalue as it is in others to over-estimate it. Of all the greater humorists of the world there is none whose humour, relatively to the extraordinary width of its outlook, is so singularly lacking in penetrative power. His wealth in this quality is indeed ample, but it is laterally, not vertically, disposed. To compare Sterne with Dickens is like comparing the owner of a small but richly yielding mine with the proprietor of an immense but light-soiled estate. The one sinks deep shafts into his little plot of earth, while the other seems to have hardly more than scratched the surface of his broad acres. It is this lack of depth in the Dickensian humour which has led many in their disappointment to dismiss it with too hasty disparagement as "caricature." There is justice in the sentence, but not complete justice; for though caricature is almost invariably its basis, and in "Pickwick" forms its whole stuff and substance, there is much more in its best examples than mere exaggeration of the comic aspects of character at the expense of proportion and truth. Still it remains the fact that many, and those the most famous, of his humorous portraits are not so much portraits of men as they are idealised studies of incarnate "humours" in the sense

in which Ben Jonson uses the word. They have not the wholeness, the complete humanity of Falstaff or of My Uncle Toby; they are simply human vices, or human foibles personified to the exclusion of every other human attribute. There must have been more in Pecksniff than hypocrisy, pomposity, meanness; more in Mrs. Gamp than garrulity, greed, dishonesty; more,

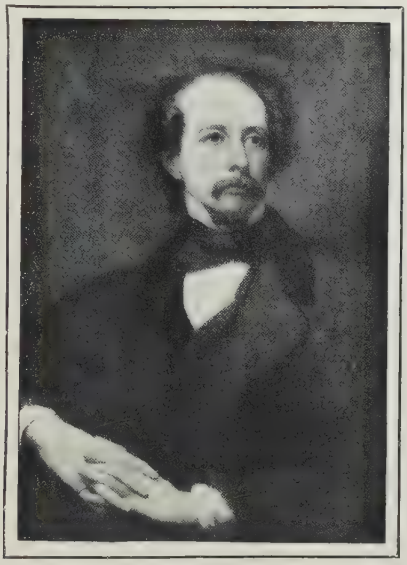


Photo: Walker & Cockerell.

CHARLES DICKENS IN 1855, BY ARY SCHEFFER.

(*National Portrait Gallery.*)

perhaps, even in Squeers than brutality, ignorance, and impudent conceit; yet this is all of these characters that we are ever permitted to see. Realist as Dickens supposed himself to be, and in his descriptive method actually was, he is, dramatically speaking, an idealist pure and simple. He drew not individuals, but types; he dealt, not with concrete realities, but with abstract qualities; and strange as it may seem, the characters of this prose humorist must be viewed as we view the purely ideal creations of the poet, if we would do justice either to him or to them. For it is only by thus studying these characters that we can fairly measure that inexhaustible wealth of comic imagination, that unflagging zest and dexterity of humorous portrayal, which

carries captive the reader's judgment, and compels him for the time to share their creator's belief in their existence.

His Pathos and Tragedy.

Of the pathos of Dickens it is impossible to speak with the same confident admiration. Much more seriously and much more frequently than his humour did it suffer from those remarkable lapses of self-restraint, and that singular incapacity of self-criticism, which make themselves felt at intervals throughout the whole of his literary work. And whereas his humour, even where through extravagance it overshoots its mark, is almost always genuine to start with, his pathos, on the other hand, is more than occasionally false. Like Sterne before him, he succeeds best where he is least self-conscious and deliberate in his appeals to the reader's sympathy. It is where, like Sterne with his Maria, he "lays himself out" to be pathetic, as with his little Nells and little Pauls, that his failure is the most disastrous. But in his command of the tragic and the terrible he has been rarely equalled. The scene in which he places, and the atmosphere with which he surrounds, his incidents of horror, are conceived and rendered with tremendous power, and it is in these, perhaps more than in any other parts of his writings, that the consummate literary art of which he was the not always sufficiently acknowledged master, is the most strikingly displayed.

Thackeray's Early Works.

The greatest works of his greatest rival do not fall within the period with which we are dealing—his masterpiece, as by many it is considered, having been only commenced in serial form in the year with which that period closes. It is best, therefore, that detailed notice of him should be reserved for the succeeding chapter. But though Thackeray (1811–63) was hardly known to the public of the early 'forties otherwise than as a writer of humorous sketches for the then infant comic periodical press, we must not forget that to this early phase in the development of his genius belongs that most masterly study of the character of the unscrupulous adventurer—hardly even now appreciated at its full worth—which alone should have sufficed to give the author a leading place not only among the novelists of his century, but among the greatest analysts of human character and motive that the modern world has produced. "Barry Lyndon" is a work which Balzac himself at that date had hardly equalled, and which certainly he never surpassed.

In 1843, however, the taste for such penetrating studies of character had not arisen; it had indeed to be created in a large measure by Thackeray himself. Romance, except in so far as it had been displaced by the novel of humour in the hands of Dickens, was still, as was only natural during the decade succeeding the death of Scott, the most popular form of fiction, and Thackeray for some years to come had still—as is recorded in a well-known anecdote—to endure its most successful professor's jovial condolences on the public neglect of his infinitely superior work. William Harrison Ainsworth (1805–82) and G. P. R. James (1801–60) were then at the height of their somewhat cheaply earned fame. The former, though inferior to his rival in strictly literary merit—if indeed that quality can be correctly attributed to either of them—is by much the more animated and attractive writer of the two. In pure storytelling power, in dexterous arrangement of dramatic situation, and in dash and rapidity of action, he often shows himself, indeed, to be no unworthy, if no conscious, imitator of Dumas; as in fact he also recalls that great romancer in his utter indifference to the higher arts of characterisation, and his complete contentment with a set of *dramatis personæ* possessing no more life than is necessary to carry them through a series of stirring adventures. James, a more avowed and obvious follower of Scott, had also a faint touch of Scott's romantic spirit; but almost all his novels are of that one inadmissible *genre* defined by the French critic as *le genre ennuyeux*. And the intolerable slowness of their movement as individual stories was hardly compensated by the speed with which they followed one another from his too prolific pen.

Romance: Ainsworth and James.

A man of far wider culture, and of infinitely greater versatility, was Edward Lytton Bulwer (1803–73), afterwards raised to the peerage under the title of Lord Lytton. Indeed, if versatility were everything, and the power of writing well in many forms, if supremely well in none, were to be taken as the test of excellence, he would be beyond all competition the foremost writer of his age. The fashionable novel, the novel of crime, the historical novel, the romance of the supernatural, the domestic novel, the novel of social satire, the novel of speculative fantasy, the comedy, the melodrama, the historical drama—at each and all of these forms of imaginative writing he tried his

Bulwer Lytton.

hand during his half-century of literary activity, and in every instance with a success to which "Pelham," "Paul Clifford," and "Eugene Aram," "The Last of the Barons" and "The Last Days of Pompeii," "The Caxtons" and "My Novel," "Kenelm Chillingly," "The Parisians" and "The Coming Race," remain to testify in the literature of the study, as do "Money," "Richelieu," and "The Lady of Lyons" in that of the stage. It has been said with truth that if literary honours were awarded on the "marks" system—so many for poetry, so many for prose, fiction, essay, drama, and so forth—and the scorer of the highest aggregate to obtain the highest place, the author of those picturesque romances which reminded their admirers of Scott, of those novels of humour and reflection which were such dexterous imitations of Sterne, and of those plays which, with all their defects, still keep the stage, would be easily first. But remarkable as is their technical excellence, there is a lack of the genuine ring of genius about all of them; and all but one or two of them have now their portion, like all other works of mere talent, however brilliant, among the snows of yester-year.

WILLIAM HARRISON AINSWORTH, BY DANIEL MACLISE, R.A.
("*Fraser's Magazine*," 1834.)

Marryat.

One special department of romantic fiction remains to be noticed, in recognition of the singular power and still surviving popularity of the writer who stands at the head of it, though he had few or no notable followers in his own days, and has not had many in ours. Frederick Marryat (1792–1848) was not in his first youth when he began to write, but it may be said that the

whole of his previous life from early boyhood had been passed in accumulating the materials for his fiction. He retired from active service in the Navy about 1830, having then already produced at least one, and perhaps having written more than one, of the nautical novels which, or rather the subsequent additions to their number, gained him a popularity which he still retains. His skill in construction is not great, and his style wavers, like the legs of the recently landed traveller, whenever he quits the sea for the shore. But when afloat its breezy vigour and directness serve his purpose admirably. His descriptions of storm and battle are full of life and movement; his naval characters are drawn with a convincing reality of touch; and his humour is not less rich and broad, while it is infinitely more good-natured, than that of Smollett. A writer with many of the qualities of Marryat, though also with others, which apparently only advancing years developed, was Charles Lever (1806–72). His stories of Irish life, and of military adventures, during the period of the Great War, are as full of boisterous fun as Marryat's, and not inferior to his in spirited draughtsmanship. Lever, however, was too rapid and reckless a writer in his early days to have escaped publishing a good deal of inferior matter, and perhaps the full measure of his gifts was not displayed till near the close of his life, when, adopting an entirely new style to suit the changed taste of the public, he produced two or three novels abounding in quiet humour and in penetrative studies of life and character.

EDWARD BULWER, LORD LYTTON,
BY DANIEL MACLISE, R.A.
("*Fraser's Magazine*," 1832.)

Disraeli: The Political Novel.

One more novelist of unequal performance in many respects, but as fertile of imagination as he was of political resource, and with a literary touch as brilliant as his political genius, remains to be noticed in Benjamin Disraeli, Earl of Beaconsfield (1804–81). The first work which brought him into notice was one of remarkable cleverness and promise, but flimsy in construction, flashy in style, and altogether demanding too much indulgence for the vanity and impertinence of youth. Nevertheless it received at the time what it demanded, and the success of "Vivian Grey" was repeated in a series of romances published by their author in the course of the 'thirties. But it was not till after his return to Parliament in 1837, and his entrance therewith not only into public life but into the best and most authoritative political society, that he can be said to have "found himself" as a novelist. For it was then that he made that unique and fascinating addition to the literature of English fiction—the political novel, a form which has never since been attempted with more than partial success, but which in his hands became not only a vehicle for pungent social satire, interspersed with acute and often profound reflections upon history and politics, but also a complete and invaluable record of the political issues and situations of the author's day.

CAPTAIN FREDERICK MARRYAT.
(*From a drawing by D'Orsay.*)

REGINALD HUGHES. The Developments of Painting.

THE artists who reached the maturity of their powers in the later years before the Pre-Raphaelite revival were not, on the whole, men of great distinction. The eldest and most accomplished of these was Sir Charles Eastlake, a man of fine culture, elected

Academician in 1830, and President of the Royal Academy twenty years later. He served the cause of art somewhat poorly as a painter, but quite admirably as a historian and critic. Something of the same sort may be said of William Dyce, chiefly remembered as a fresco painter, whose somewhat severe manner is not without traces of that study of the great Italian masters to which his youth was devoted. The best of his life was spent in forwarding the cause of the school of design, which, established in the first years of Queen Victoria's reign, has had a remarkable development in our own day. A better remembered name is that of the Irishman Daniel Maclise, who, in his day —which may be fixed about 1840, when he was elected an Academician— had a prodigious vogue. He painted frescoes, huge dramatic pieces, portraits, genre, everything. His talent may be fairly gauged by his famous picture of "The Play Scene in *Hamlet*," combining vigorous composition with extreme staginess, while the texture is wooden and the colour unattractive.

Eastlake; Dyce; Maclise.

BENJAMIN DISRAELI, BY DANIEL MACLISE, R.A.
("*Fraser's Magazine*," 1833.)

Neither was portrait painting at this period in a much more promising condition. Its principal practitioners were Pickersgill, Grant, Macnee, and Boxall—none of them, except perhaps Boxall, artists of any originality. Genre was better served by Thomas Webster, on whom, though a poor colourist, the mantle of Wilkie to some extent fell. The English schoolboy, particularly the village schoolboy, has never been delineated with more spirit or more humour. He was a prolific painter, too; many of his

Webster.

pictures—such as "The Smile" and "The Frown," "The Boy with Many Friends" and "A Village Choir"—retain to the present day a well-deserved popularity.

Sir Edwin Landseer.

In two departments, however, an advance can be noted in this period. The painting of animals and the painting of the sea vastly improved. This was due mainly to two men, Edwin Landseer and Clarkson Stanfield. The former of these came of a family of artists; his father and brother were engravers, while another brother, Charles, was a painter of genre subjects. He was not only a passionate lover and observer of animals, but a scientific student of their anatomy. His observation of character was, indeed, neither profound nor intense, but it was thoroughly sympathetic, and he noted movement and gesture admirably. "The Shepherd's Chief Mourner"—the faithful collie pressing lovingly against the dead master's coffin—perhaps his most famous work, has been described by Mr. Ruskin as one of the most perfect poems which modern times have seen. He was a master of texture, too, and only the unfortunate defect in his feeling for colour prevented him from being a great artist. He is never better seen than in chalk studies of animals in motion. Translated into the black and white of engraving, his pictures have had, and will probably always have, an amazing success. His career was long. He was an exhibitor at the Royal Academy as early as 1817, when he was only fifteen, and his best work was done prior to a severe illness in 1851. He was elected an R.A. as early as 1831, and in 1850 he was knighted. He worked for twenty years and more after this, but these productions (which include the lions in Trafalgar Square) belong to a later period.

Stanfield.

Clarkson Stanfield arrived at distinction a few years later than Landseer. An older man by nine years, he was not elected an Academician till 1835. He was a scene-painter by profession, and did not quit that *métier* until 1829. He has been termed the first purely marine painter that England produced, and this in substance is a correct appreciation. Of course, there had been earlier English painters of the sea. There had been several painters of sea-fights, and of what one may call marine genre. The splendour or terror of the sea enters into more than one of Turner's masterpieces. But in Clarkson Stanfield the sea is the predominant partner, and his pictures exist for its sake. His

A VILLAGE CHOIR, BY THOMAS WEBSTER, R.A.
(Victoria and Albert Museum.)

knowledge of it was profound, and had been gained in the severe school of experience, when, as a boy, he had shipped before the mast. One work of Stanfield's alone (we quote from "Modern Painters") presents us "with as much conscientious knowledge of sea and sky as, diluted, would have lasted any of the old masters his life." He drew the sea, too, as a figure-painter draws

ENTRANCE TO THE ZUYDER ZEE, TEXEL ISLAND, BY CLARKSON STANFIELD, R.A.
(*National Gallery.*)

a model, with complete confidence in the sufficiency of its beauty; and though somewhat commonplace in feeling, missing its glories of colour, its mystery and awe, he is never trivial or extravagant.

REGINALD HUGHES. Architecture, 1815-1840.

In the first quarter of the eighteenth century, architecture, as a living art, had been laid to rest in the grave of Wren. About the beginning of the nineteenth century it seemed to show signs of awakening; but its awakening, after a sleep of three generations, resembled that of a hypnotised subject, acting

PEACE.

WAR.

(*From the paintings by Sir Edwin Landseer, P.R.A., in the National Gallery.*)

first on the suggestion of a Greek, afterwards on that of a Gothic, builder. The note of both movements was reproduction or mimicry rather than application or development, and both owed a good deal to literature. The learned publication of Dawkins and Wood had, as far back as 1750, drawn attention to the glorious ruins of Palmyra, and Adam, some ten years later, had made known to his countrymen the imposing remains of Diocletian at Spalato. A similar work in serial form, dealing with the architectural wonders of Greece, published under the auspices of the Society of Dilettanti (Vol. IV., p. 381) had also a considerable vogue, so that when, in 1803, the arrival of the Elgin Marbles (p. 666) showed a tangible Greece to English people, it was not unnatural that there should have been an explosion of something like enthusiasm. To reproduce a Greek or even a Roman building, or part of a Greek or Roman building, on every possible opportunity, was recognised as the chief, if not the whole, duty of the architect. But as the necessities of life in our dark and rainy climate did not usually permit the carrying out of whole buildings in the Greek manner, these expensive adjuncts remained adjuncts, with no relation, or at any rate no intimate relation, with the rest of the edifice. Men like Nash and Smirke and Wilkins, preceded a few years only by Soane and Wyatt, and followed a few years later by Tite and Burton and Basevi, worked in this faith, and what they constructed remains with us to this day. Such are the Bank of England, by Soane; London University and the National Gallery, by Wilkins; the British Museum, by Smirke; the Royal Exchange, by Tite; and the Fitzwilliam Museum at Cambridge—one of the last and best of the series—by Basevi.

The Classical Revival.

Not many neo-Pagan churches were built in the earlier time of the revival, and perhaps it is fortunate. Of such, St. Pancras, London, by Inwood, finished in 1822, is the typical example. Everything there is copied, yet the architect was not content simply to copy. Having transplanted his magnified Erechtheum to Euston Square, he placed above the tall Ionic portico a two-storied Temple of the Winds. With what aim is uncertain; but the effect is unfortunate. The little temple, while crushing the portico and distracting the eye from the imposing lines of the mass underneath, is in fact perched up so high that its real elegance of form cannot be discovered. So, too, the rich flanking

caryatid porticoes, handsome in themselves, are failures as they are placed, coming as a surprise at the end of a long bare wall. The church is not worth mentioning except for this, that it

ST. PANCRAS CHURCH.

shows that our classical copyists could not copy. Probably the best building of the class in England is St. George's Hall at Liverpool, built by Elmes early in the 'forties, and finished, as to the interior, by Cockerell, the tasteful designer of the Taylor Institute at Oxford. The dimensions of the building, 420 ft. by 140 ft., are exceptionally noble, nor less exceptional is the consistency and simplicity of the colonnade and the general beauty of the detail.

The Gothic Revival.

But if successful copying of Greek temples was shown to be to some extent possible to the classic architect, to the Gothic architect the copying of Gothic churches was not only possible but easy. Original and copy belonged to the same country, the same climate, the same religion. Transmutation was not required, only translation. Oddly enough, however, it was for lay purposes that the neo-Gothic style earliest commanded popularity. James Wyatt spent something like a quarter of a century and a quarter of a million of money in building a sham Gothic abbey for the author of "Vathek." It was hailed as a discovery, and, in Fergusson's often-quoted phrase, "nothing was thought of or built but Gothic castles, Gothic abbeys, Gothic villas, and Gothic pigsties." The public mind had to some extent been prepared for this by the works of Britton and Rickman, the latter of whom was the veritable founder of a school of archæology. Finally the younger Pugin, a man of genius both as architect and writer, started something like a crusade in favour of the purer forms that prevailed prior to the Reformation. In the dearth of a living style of architecture, the fiery advocate of the past triumphed on every side, and his Catholic churches (for in his hatred of Protestant architecture he cast off the Protestant religion) became models for imitation. Two great advantages the Gothic architect certainly had over his classical brother. He worked in the most adaptable instead of the most intractable of styles. Windows, finials, buttresses, panels, brackets, mouldings, models of every form and for every purpose, were to be found in England by any industrious seeker. It was cheap too; for, if the outlines and traceries are correctly copied, a good general effect can be obtained with quite worthless details. All this made the new Gothic popular with the intelligent architect and the intelligent laity, while the tendency of the old Catholic form of architecture to enhance the priest's ceremonial importance helped to make it popular with the intelligent clergy.

The Houses of Parliament.

The great era of church restoration and extension was, however, not yet. Before it came, chance decided that the greatest lay building of the century, the Parliament House at Westminster, should also be Gothic. The old buildings were destroyed by fire in 1834, and Parliament determined that its new abode should be of the style in vogue. The new building

was begun in 1840, the architect being Sir Charles Barry, the builder of that imitation of the Farnese Palace known as the Reform Club-house. He was, in fact, a student rather of the Renaissance than of the times of the Plantagenets, and as a result his general design is classical in feeling, while the details are Gothic. It is a building full of defects; the Victoria Tower is too big; throughout there is want of accent; the ornament

FONTHILL ABBEY IN 1823.
(Drawn and engraved by T. Higham.)

is largely ineffectual, and one feels that, after all, the whole thing is modern to the core. But the grandeur arising from size—the mass covering eight acres—the stately length of the terrace (exceeding 990 ft.), and the real elegance of the central tower, make it, all said and done, a very imposing edifice, perhaps "the most successful attempt of the century to apply medieval architecture to modern life."

A. M. CLERKE. Astronomy, 1815-1846.

English astronomy was, in 1815, passing through a stage of temporary decline. The great career of the elder Herschel (1738–1822) had virtually closed; that of the younger Herschel (1792–1871) had not yet opened. The excise duty on glass

barred the way to improvements in refracting telescopes; and competition seemed hopeless with the giant mirrors lying disused at Slough. The promise of better things was not, however, absent. Stephen Groombridge (1755–1832), a retired linendraper, had nearly completed the 50,000 observations from which his "Catalogue of Circumpolar Stars" was constructed; one of Troughton's grand circles replaced at Greenwich, in 1812, Bradley's superannuated quadrant; and mathematical analysis, under the motive power supplied by the enthusiasm of Herschel, Babbage, and Peacock, was rapidly making its way at Cambridge. A general revival was marked by the foundation, in 1820, of the Astronomical Society of London, designed by Dr. William Pearson (1767–1847), and powerfully promoted by the indefatigable Francis Baily (1774–1844), who did more than any man to render astronomy cosmopolitan by reducing British and foreign practical methods to uniformity.

The Revival.

John Pond (1767–1836) was meantime labouring to re-create official astronomy. He succeeded Dr. Nevil Maskelyne as Astronomer Royal in 1811, and attained a degree of precision in the determination of star-places that has scarcely yet been surpassed. His prolonged controversy with Dr. Brinkley (1763–1835), Astronomer Royal for Ireland, regarding certain alleged star-parallaxes, in which he took the negative, and, as it has proved, the right side, strongly stimulated improvement; and Bessel's saying, that the *ne plus ultra* of modern refinements was reached in his later catalogues, has been justified by Dr. Chandler's disengagement from his "double-altitude" observations, not only of a minute periodical variation of latitude, but of its epicyclical character.

Sir George Airy's (1801–92) energetic administration at Greenwich lasted forty-six years—from 1835 to 1881. It was marked by a great widening in the scope of the inquiries pursued. New departments of activity—magnetic, meteorological, and spectroscopic—were created; the study of the constitution of the heavenly bodies was associated with that of their movements; and the step was definitively taken of lifting our national astronomy to a higher plane than that of mere practical utility.

During the first third of the century the southern hemisphere was, so to speak, annexed. Observatories were erected

THE HOUSES OF PARLIAMENT.

Photo: York & Son, Notting Hill, W.

Observations in the Southern Hemisphere.

by the East India Company at Bombay, Madras, and St. Helena; and by Sir Thomas Brisbane at Paramatta, New South Wales, where, on June 2nd, 1822, Encke's comet, then invisible in Europe, was detected on its first calculated return to the sun. Above all, the equipment at the Cape of Good Hope of a royal observatory corresponding to the Greenwich establishment, was accomplished in 1829, the grandiose idea of universal dominion over the skies being thus realised as a simple consequence of England's world-wide mercantile and colonising energy. Fearon Fallows (1789–1831), the son of a poor weaver at Cockermouth, was the first Cape astronomer. He died July 25th, 1831, the victim of accumulated misfortunes and mishaps, and was succeeded by Thomas Henderson (1798–1844), subsequently Astronomer Royal for Scotland. During his one year's exile he worked with incredible diligence; and his discussion at home of the collected data brought to light, for the splendid binary star α Centauri, an annual parallax of one second of arc, implying a distance of close upon twenty billions of miles. This was the earliest authentic result of the kind obtained, although its announcement, January 3rd, 1839, was slightly anticipated by Bessel's regarding 61 Cygni.

SIR GEORGE BIDDLE AIRY.

(*From "The Royal Observatory, Greenwich," by E. W. Maunder, Religious Tract Society.*)

Geodesy.

Sir Thomas Maclear (1794–1879) came third on the list of royal astronomers at the Cape, and his re-measurement of Lacaille's arc of the meridian was one of the most important geodetical operations of the century. In this direction England took the lead of other nations by the trigonometrical surveys of India, England, and South Africa, usefully supplemented by the

pendulum-swinging experiments conducted in various parts of the globe by Sabine, Foster, and Kater. These investigations of the earth's figure may be associated with Baily's elaborate determination of its mean density. Adopting and improving Cavendish's method of 1798, he arrived in 1842 at the nearly exact conclusion that our globe weighs 5·66 times more than if composed throughout of water.

Sidereal science made a fresh start when John Herschel and

ROYAL OBSERVATORY, CAPE TOWN.

(*From a photograph supplied by H. M. Astronomer.*)

James South combined, in 1821, to re-measure Sir William Herschel's double stars. Within two years 380 pairs had been tested for orbital motion, in many cases unmistakable; then the colleagues separated, South carrying on the work at Passy, and Herschel at Slough. By 1833 the latter had discovered 3,347 new stellar couples, and his sweeps at the Cape in 1834–8 yielded an additional harvest of 1,200. During many ensuing years, however, the subject received little attention in this country, except from Admiral W. H. Smyth (1788-1865) and William Rutter Dawes (1799–1868), perhaps because it had been

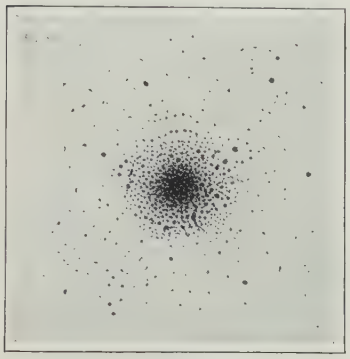
Double Stars.

Sir John Herschel's Work.

virtually appropriated in Russia by Wilhelm and Otto Struve. Double stars are indeed observed mainly that their mutual orbits may be computed ; and this, because of the extreme smallness to which their orbits are reduced by distance, is a very delicate matter. It was immensely facilitated by Sir John Herschel's invention, described before the Royal Astronomical Society, January 13th, 1831, of a graphical method by which rigid numerical data are moulded into harmony by the aid of the eye and hand, guided by the instinctive judgment of common sense. This made the practical beginning of stellar gravitational astronomy.

His "review" of the northern heavens was executed at Slough during the years 1825–33 with a twenty-foot reflector of his own construction. Its leading object was to call over the roll of his father's nebulæ, a large number of which could be seen with no other instrument then existing, so that their identification devolved upon him as a scientific duty, no less than by inheritance. The outcome of his labours was a catalogue of 2,307 nebulæ, 525 of them previously unrecorded. Accompanied by a number of beautiful and characteristic drawings, it was published in the "Philosophical Transactions" for 1833. Stimulated by success, and conscious of unexhausted powers, he determined to round off to completion his "Survey of the Nebulous Heavens," and embarked for the Cape with his family and instruments, November 13th, 1833. His stay of four years at Feldhausen made an epoch in southern astronomy. He discovered and catalogued 1,700 nebulæ, his monographs of several of these wonderful objects representing, in themselves, a formidable expenditure of toil ; and his extensive, though not exhaustive, lists of the nebular and stellar contents of the Magellanic Clouds still remain the sole authority upon the subject. He, moreover, extended his father's experiments on the construction of the heavens by counting 70,000 stars in 2,300 gauge-fields ; established stellar photometry on a firm basis ; and by his description of the threefold increase in the light of η Argûs, December 16th, 1837, drew attention to that star's abnormal character. His observations of the varying aspects of Halley's comet between October, 1835, and May, 1836, are of permanent interest ; and his study of the development of sun-spots at the maximum of 1837 led him to originate the cyclonic theory of

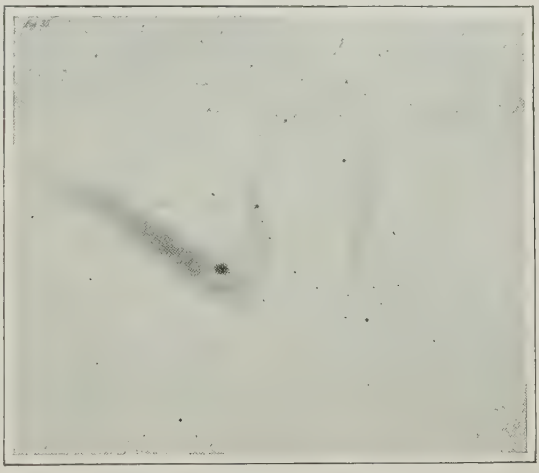
their origin. The detailed results of this brilliant expedition were collected in a finely illustrated quarto volume published in 1847.



DRAWING OF NEBULA BY SIR J HERSCHEL

"Baily's Beads."

"Baily's Beads" were first expressly noticed by Francis Baily during an annular eclipse of the sun on May 15th, 1836. The phenomenon consists in the breaking up into lucid points of the narrow solar crescent left by the moon's advance, and is caused primarily by the serrated nature of the moon's limb. Effects of irradiation and bad definition then combined to complicate appearances which optical improvements have since reduced to comparative insignificance. Baily's vividly expressed wonder at them may be said to have inaugurated the era of eclipse-expeditions; and he himself repaired to Pavia for the purpose of observing the totality of July 8th, 1842, during which the corona and prominences displayed themselves with such startling splendour as to raise the problem of their nature to the very first rank among those presented, at that time, to students of the sun.



DRAWING OF NEBULA BY SIR J. HERSCHEL.
(*"Philosophical Transactions," Royal Society*, 1833.)

Very early in its known career the new planet Uranus (discovered by William Herschel in 1781) began to give trouble

The Planet Neptune.

to computers of its orbit. It was hoped that Bouvard's Tables, published in 1821, would set things straight, but evidence of continued recalcitrance was quickly forthcoming. The idea, accordingly, that these persistent irregularities were due to disturbance by an exterior body, formed itself in a few sagacious minds; and the Rev. T. J. Hussey even contemplated, in 1834, the possibility of assigning the position, at a given epoch, of the hypothetical planet. This arduous task was, indeed, far beyond his powers; but in 1841 John Couch Adams (1819–92), then an undergraduate of St. John's College, Cambridge, laid his plans for grappling with it. No sooner, in fact, had he taken his degree as Senior Wrangler than he proceeded to carry them into execution; and on October 21st, 1845, he deposited at the Royal Observatory a paper containing a complete explanation of Uranus's untoward behaviour through the gravitational action of a body soon afterwards known as "Neptune." The "inverse problem of perturbations" thus received its first solution. Although Adams gave the orbital elements and place in the sky—exact, as it proved, to within about three lunar diameters—of the disturbing body, it was not until Leverrier had announced a similar conclusion that a search was, by Airy's request, instituted for it by Professor Challis at Cambridge. And the pursuit was conducted in so leisurely a fashion that the planet, observed on August 4th and 12th, 1846, remained unrecognised pending the comparisons by which alone, in the absence of a comprehensive star-map, it could be sifted out from the multitude of surrounding stars; so that the prize of its visual discovery, on September 23rd, fell to Galle of Berlin, acting on Leverrier's instructions. In justification of Airy's indifference, it should be added that an inquiry addressed by him to Adams, early in the proceedings, regarding an essential point in his theory, was unaccountably left unanswered. The attendant satellite of Neptune was detected, October 10th, 1846, by William Lassell (1799–1880), at Starfield, near Liverpool. He used a reflector two feet in aperture, of exquisite definition, made and equatorially mounted by himself.

The construction of this class of telescope has, from Newton's time until now, been left mainly to British artists and amateurs. The giant speculum finished by the third Earl of Rosse (1800–67), in February, 1845, has since been surpassed in light-power,

but not in size. The reason of this apparent anomaly is that the metal composing it is considerably less reflective than silvered glass, the material of modern reflectors; hence Dr. Common's five-foot gives brighter images than the Parsonstown six-foot mirror. The latter was especially effective in the resolution—occasionally fallacious—of nebulæ into stars; and the **Nebulæ.**

THE GREAT TELESCOPE, BIRR CASTLE, IRELAND.
(*By permission of the Right Hon. the Earl of Rosse.*)

opinion gained ground that the process could be indefinitely extended with the indefinite extension of telescopic vision. Herschel's theory of the development of nebulæ into stars sank, accordingly, into discredit; the distinction between nebulæ and clusters was regarded as a mere effect of distance; and thought ranged amid an archipelago of "island-universes" almost infinitely beyond the bounds of the Milky Way.

The discovery, with the great reflector, of spiral nebulæ proved of more permanent importance. This remarkable type of structure first disclosed itself, in April, 1845, in the well-known shining vortex situated near the tail of the Great Bear; its prevalence was soon attested by further examples, and has been amply confirmed by photographic inquisitions. The

workings of a fundamental law of sidereal growth and change are thus clearly illustrated to our sight, though very dimly, as yet, to our apprehension.

W. G. RHODES. Physics, 1800-1846.

To give a detailed account of the progress of the science of physics during the nineteenth century would demand a volume in itself; the rate at which Nature's laws have been unfolded by philosophers, some now passed away, some still living, has been so great that a comparison of the condition of science at the beginning of the century with the scientific knowledge of to-day, together with its many and extensive applications for the benefit of the public, show that the hobby of the few in 1800 has now become the occupation of the many.

Electrical Science: Volta.

Until the year 1800 our knowledge of electricity was purely statical; that is, the only sources of electricity then known were friction machines of various kinds, induction machines of the electrophorus type, and atmospheric disturbances. The discovery of the electric pile by Volta in the year 1800 furnished a source from which a continuous supply of electricity could be obtained. Volta's pile was quickly followed by his cell, which consists of a cup or cell of acidulated water into which dip side by side a piece of zinc and a piece of copper. This arrangement causes an "electromotive force" to be set up, so that when the copper and zinc are connected by a wire an electric current is sent from copper to zinc through the wire, and from zinc to copper through the liquid. The effects produced by the passage of electricity through bodies could now be more easily observed. It was already known that an electric discharge produced destructive effects on passing through a body. Lightning conductors had been introduced by Franklin to protect buildings and life from the terrible consequences which had sometimes been observed during thunderstorms. Buildings had been burnt, and people and animals killed and their bodies sometimes charred by a lightning flash, or a thunderbolt, but the discharge was so instantaneous that there was not time to study the nature of the process. Volta's cell, however, furnished a means of producing a continuous supply of electricity. The spirit of investigation was aroused, and every physicist directed his energies to find out, if possible, the nature

of electricity, and to investigate its effects upon various forms of matter.

Sir Humphry Davy.

Davy (p. 86), the director of the chemical laboratories at the Royal Institution in Albemarle Street, which Count Rumford had founded in 1800, was one of the first in England to profit by Volta's discovery. He applied the electric current to decompose, by the process called electrolysis, various chemical compounds, and also by this means discovered that some substances, previously thought to be elements, were in reality chemical compounds. In this way Davy discovered in 1807 the five metals—potassium, sodium, barium, strontium, and calcium. Davy's electrolytic researches were only qualitative; that is, he observed the nature but not the amount of the electrolytic actions. It was left to the illustrious Faraday, his assistant and subsequent successor, to determine the quantitative laws which govern the decomposition of substances by electrolysis.

The Voltaic Arc.

To Davy is also due the discovery of the voltaic arc. He found that if the two wires coming from the terminals of a voltaic battery are brought together and then parted, a spark will show itself as they part; the spark he found to be brighter if dense charcoal points were used to take the spark. The discovery was made, but, owing to the difficulty of obtaining a sufficiently large electric current, was not developed until the production of the voltaic arc was rendered easier by the invention of dynamo-electric machines. In the autumn of 1815 Davy invented the miners' safety lamp which bears his name. Almost simultaneously, and quite independently, George Stephenson the engineer (p. 273) invented a safety lamp identical in principle with Davy's, but somewhat different in detail. Both depend on the principle that a white heat is necessary to ignite the inflammable gases which are found in coal mines; so that flame cannot pass through narrow metallic passages if the metal is kept below a certain temperature.

Davy was not a scientific recluse. He lived at a time when a man of his calibre was much sought after. His position at the Royal Institution brought him into contact with the leading men of the day. Fascinating as a man, enthusiastic as a lecturer, and gifted with a ready flow of language, he contributed to the advancement of science as much by attracting large and influential audiences to his lectures as by his valuable

researches. For his services he was created a baronet. He died in 1829, at the early age of fifty-one.

Thomas Young.

A contemporary of Davy's, though a man of entirely different type, was Thomas Young, who for two years occupied the chair of Natural Philosophy at the Royal Institution. Educated at the Hunterian School of Anatomy and St. Bartholomew's Hospital, and afterwards at Göttingen, he became qualified as a medical practitioner in 1796. He had already been elected a Fellow of the Royal Society for a treatise on the eye. He entered Emmanuel College, Cambridge, in 1797, and did not commence to practise as a physician until the year 1800. In 1801 he accepted the chair of Natural Philosophy at the Royal Institution, but resigned after holding it for two years in order to devote himself to the medical profession.

Theories of Light.

Prior to Young's time there were two theories of light, Newton's *corpuscular* theory and Huyghens's *wave* theory. No crucial test or experiment had been devised to decide in favour of either. Sound was known to travel by means of longitudinal aërial undulations. Young discovered that two sound-waves could destructively interfere and produce the phenomenon of *beats*. His greatest work was the application of the principle of interference to light. Placing a source of light behind a disc of cardboard punctured with two small pin-holes very near together, he observed a series of light and dark bands on a white screen placed near the disc on the opposite side from the source of light. The light proceeding from the two pin-holes had produced interference phenomena, and the wave theory was justified. The wave theory was not satisfactorily completed, however, until Fresnel (1788–1827) in Paris shortly afterwards theoretically explained the interference phenomena by supposing that luminous vibrations take place in an all-pervading æther, and *in a direction at right angles to the direction of propagation of the light*. Fresnel still further justified the wave theory by applying it to explain the phenomenon of polarisation of light discovered by Malus at the beginning of the century.

As Foreign Secretary to the Royal Society, Young forwarded to Fresnel the Rumford medal for his researches on light. Fresnel died a few days afterwards, at the age of thirty-nine.

Amongst Young's contributions to physical science must also be reckoned his researches on elasticity. He was a remarkable

man in many ways, and up to his day ranked second only to Newton as a natural philosopher. He was proficient in chemistry, physics, medical science, mechanism, and was more or less familiar with fourteen languages. He was also an authority on Egyptian hieroglyphics. He died in 1829, three weeks before Davy.

Electricity and Magnetism.

At the beginning of the century it was known from Coulomb's researches that two magnetic poles acted upon each

THOMAS YOUNG, BY H. P. BRIGGS, R.A.
(*By permission of the Royal Society.*)

other with a force directly proportional to the product of their strengths, and inversely proportional to the square of the distance between them; and the same law was known to hold good for the force exerted by two quantities of electricity upon each other. This led many scientists to seek for relationships between magnetism and electricity.

Oersted.

The first to bring to light a connecting link was Hans Christian Oersted, of Copenhagen. Often had he tried and as often failed. During the winter 1819–20 the discovery was made in the presence of a class of students. While lecturing he suddenly thought of a new mode of attacking the problem. Taking a wire joining the poles of a battery, he placed it parallel to and above a compass needle. Instantly the needle was

deflected from its position, and the discovery was made that a force exists between an electric current and a magnet. He also found that on reversing the direction of the current the needle was deflected in the opposite way. The discovery was published in the summer of the year 1820. In recognition of his work the Royal Society awarded to Oersted the Copley Medal in 1820.

Oersted's discovery marks the birth of the subject of electromagnetism. The beginning was made, and the subsequent rapid development speaks volumes for the scientific intellect of the period.

Ampère.

On September 11th, 1820, André Marie Ampère, Professor of Mathematics at the École Polytechnique, Paris, first heard of Oersted's discovery. Immediately setting to work, he repeated Oersted's experiment and devised and successfully performed many others. On the 18th of the same month he announced the fundamental principles of electromagnetism. In one week he had worked at the subject both experimentally and theoretically; he discovered that a pivoted wire spiral carrying an electric current behaved like a magnet and set itself in the magnetic meridian; he investigated the action of currents on currents, predicting theoretically and verifying experimentally that two parallel electric currents attract each other when they flow in the same direction, and repel each other when they flow in opposite directions; also that two currents not parallel attract each other if they both converge to or both diverge from the apex of the angle formed by their directions, while they repel each other if one of the currents approaches the apex of the angle and the other recedes from it.

Ampère was the first to use the action of currents on magnets as the principle on which to construct a galvanometer, or current detector and measurer. In order to increase the deflection of the needle by the current, he bent the wire carrying the current into the form of a rectangle and pivoted the compass needle in the centre. Shortly afterwards Schweigger improved Ampère's arrangement by winding many turns of wire into a rectangular form. This improvement rendered the instrument much more sensitive.

In 1820 Arago in France and Davy in England discovered independently that steel wire was magnetised on placing it

inside a helix of wire carrying a current. Thus an electric current was shown not only to influence a magnet, but also to be capable of producing magnetism. This fact led Ampère to form a theory of magnetism. He supposed that every molecule of a magnet was itself a magnet, and that the molecules owed their polarity to electric currents circulating round them. This was the first attempt to explain the properties of a magnet by reference to its individual molecules. The idea of molecular currents has, however, since been shown to be unnecessary for the complete explanation of magnetic phenomena.

Sturgeon. Not long after the discovery that an electric current is capable of magnetising a piece of steel, Sturgeon in England produced an electromagnet. He found that by using soft iron instead of steel a given current would produce much more intense magnetisation, though the effect ceased when the current was stopped. He varnished the iron, bent it into the shape of a horseshoe, and wound coils of naked wire in a spiral round it.

Ohm. Although the theory of electromagnetism was so well developed, the laws governing the flow of an electric current along a conducting wire were not understood. In the year 1825, Ohm, afterwards Professor of Physics at Munich, published his famous law. He showed that the intensity of an electric current depends not only on the battery power, or "electromotive force" as it is called, but also upon the nature of the conducting wires. Different wires of the same length and thickness offered different resistance to the passage of the current. This resistance Ohm found to be an intrinsic property of the conducting wire itself. Ohm's law as it is now expressed states that the ratio of the electromotive force driving the current through a conducting wire to the current itself is constant. This ratio is defined to be the resistance of the conducting wire.

Although Ohm's discovery was of fundamental importance, it was received with doubt and scepticism by most scientists, and rejected altogether by many. The law was first recognised by the Royal Society of London in 1841, sixteen years after its publication in Poggendorff's "Annalen." In recognition of its merits Ohm was awarded the Copley Medal. Ohm subsequently published his theory of the siren. He died in July, 1854.

A new mode of generating an electric current was discovered in 1821 by Professor Seebeck of Berlin. He found that, if two

Seebeck and Becquerel.

wires of different metals were joined together to form a closed circuit and their junctions brought to different temperatures, an electric current flowed round the circuit. Becquerel, experimenting later on various metals, formed a series of metals placed in such an order that the current set up at the heated junction of any two goes from the metal which follows to that which precedes in the series. In later years the subject has been greatly advanced by Professor P. G. Tait, of Edinburgh University.

Faraday.

Foremost among experimentalists was Michael Faraday (p. 86), who became Davy's assistant at the Royal Institution in 1813. Having charge of the laboratories he had opportunities for conducting researches, first under Davy's guidance, and afterwards on his own account. He commenced his brilliant researches in electricity in the year 1821, when he re-discovered Oersted's experiment. This was followed by his discovery that a magnet will rotate round a wire carrying an electric current, and that a wire carrying a current will rotate round a magnet. The idea for this experiment Faraday got from Dr. Wollaston (Vol. V., p. 752), who had unsuccessfully tried to do the same experiment himself in Davy's laboratory. Where Wollaston failed Faraday succeeded, and obtained the first continuous motion electromagnetically.

In 1823 Faraday published his work on the liquefaction of gases. In the following year he was elected a Fellow of the Royal Society, and in 1825 he was appointed director of the laboratories at the Royal Institution.

In 1831 Faraday commenced a series of some of the greatest discoveries of the present century. In 1825 Arago had performed an experiment which puzzled the physicists of the day. On rotating a disc of copper underneath a compass needle suspended horizontally, the needle was observed first to deflect in the direction of the motion of the disc and then to rotate itself, but always at a speed slower than that of the disc. No one had explained why it was that the compass needle rotated. Faraday thought that the rotation was due to induced electricity in the disc, but, although he repeatedly attempted to show experimentally that this was the reason, he did not succeed until August, 1831. He knew that magnetism could be produced by electricity, and he set himself to discover

Electro-Magnetic Induction.

whether electricity could be produced from magnetism. He took an iron ring and wound two spirals of wire on it; sending an electric current round one spiral to magnetise the ring, he looked for an electric current in the other. The first spiral was connected with a battery and the second with a galvanometer, but when the current was flowing round the one the galvanometer failed to register any current in the other. At the instant of breaking the battery circuit Faraday observed that the galvanometer needle gave a kick, and again, but in the opposite direction, on making the battery circuit. On breaking or making the battery circuit an instantaneous *induced* current flowed through the galvanometer circuit. He saw that he was now in a position to explain the Arago disc phenomenon; *induced* currents were generated in the copper disc, and the action between these and the needle caused the latter to rotate. To prove this he mounted a copper disc so that it could be rotated between the poles of an electromagnet; he connected the centre of the disc and its edge with a galvanometer, and on rotating the disc the galvanometer needle was deflected, showing the presence of induced currents. This disc of Faraday's is the prototype of the modern dynamo. The importance of the discovery of induced currents may be gathered from the fact that now millions of pounds are annually spent on their production.

Laws of Electrolysis.

Between the years 1831–34 Faraday devoted himself to investigating the laws which govern electrolytic action. He stated the results of his researches in his three famous laws, which are as follow:—(1) The electrolytic action of a current is equal at all points round the circuit; (2) the quantity of gas disengaged in a minute is a standard measure of the average strength of the current during that minute, and the total quantity of gas evolved is the measure of the total quantity of electricity that the current has conveyed round the circuit; (3) when the same current acts on many electrolytes the weights of the elements separated by electrolysis are in proportion to the chemical equivalents of these elements.

The discovery of these laws has furnished us with our most accurate method of measuring the strength of an electric current, and all instruments intended for accurate measurement of current are standardised by an electrolytic method.

Electric Induction.

Faraday's next work was the discovery of self-induction, in 1834. He found that on making or breaking an electric circuit an *electromotive force is induced* in the circuit itself. All electromagnetic induction phenomena have been summed up by the Russian physicist Lenz in the statement that "induced currents are always generated in such a direction as tends to oppose the motion that gives rise to them."

During the period 1835–38 Faraday devoted himself to the study of electrostatic induction, and announced his theory of a medium through which electrical attractions and repulsions are transmitted at each point along a certain definite direction. The medium he considered to be in a state of strain, and he pictured it as being filled with what he called "tubes of force." An electric current flowing round a circuit causes the surrounding medium to be in a state of strain, the amount of which he represented by a number of these hypothetical tubes of force; also, induced currents are generated whenever a motion of these tubes relative to a closed metallic circuit takes place. The amount of the induced current he found to depend upon the nature of the surrounding medium. He also showed that the force exerted between two electrostatically charged conductors varies with the separating medium. The separating media, whatever non-conductors of electricity or insulating materials they might be, he named *dielectrics*, and their property on which the amount of electric action depended, *specific inductive* capacity.

Light and Electricity.

The wave theory of light had been placed on a firm basis by the experiments of Young and Fresnel. Malus had shown that light could be polarised, or, as explained by the wave theory, have its vibrations constrained to one plane by the interposition of various crystals or by repeated reflection. Faraday in 1845 found that if such a polarised beam of light is subjected to the action of a magnetic field the plane of polarisation is rotated through an angle whose magnitude depends upon the strength of the magnetic field, and the direction of the rotation is the same as that in which the current flows to which the magnetic field is due. At a subsequent date Verdet found that the amount of rotation can be taken as a measure of the strength of the magnetic field. This result is of great importance in the theory of electricity. Just as Oersted's experiment showed a

relationship between magnetism and electricity, this experiment of Faraday's pointed to a relationship between electromagnetism and light. It was left to Maxwell to reveal the true nature of the relationship.

Another important work of Faraday's was the discovery that some bodies exhibit properties exactly opposite to those possessed by iron when placed in a magnetic field. Whereas a freely

MICHAEL FARADAY, F.R.S., BY THOMAS PHILLIPS, R.A.
(*National Portrait Gallery.*)

suspended piece of iron sets itself in the direction of the field, some bodies similarly suspended take up their position of rest at right angles to the field. Bodies of the iron type, as regards their behaviour under magnetising influences, Faraday called *paramagnetic*, or simply *magnetic* bodies; those belonging to the other class, of which bismuth is the most striking example, he called *diamagnetic* bodies. To this new property of magnetism which he discovered he gave the name *diamagnetism*.

Faraday had been appointed to succeed Davy as Professor of Chemistry at the Royal Institution in 1833. In appreciation of

his brilliant work the queen in 1858 offered him a house on Hampton Court Green, where he lived until his death in August, 1867.

Faraday has justly been called the prince of experimentalists. He presented no fewer than 158 scientific memoirs to the Royal Society. Like many other important scientific truths, his conception of a medium transmitting electrical energy was viewed with scepticism by contemporary scientists. Mathematicians had grown fond of their theory of action at a distance, which did not assume as necessary any medium to act as a vehicle of energy. He was soon, however, to have as an interpreter of his views one of the greatest mathematical physicists of the age—James Clerk Maxwell.

Wheatstone. Prominent among the physicists of his day was Charles Wheatstone, Professor of Physics at King's College, London. To him is due the first attempt to measure the velocity of transmission of electricity. By means of a revolving mirror he found its rate of propagation to be 288,000 miles a second. The method used has since been applied by Foucault to determine the velocity of light. Wheatstone was also the first to apply the method of spectrum analysis to the determination of the constitution of bodies.

Rowan Hamilton. The theory of light was materially supplemented by Sir W. R. Hamilton, of Dublin. His investigations in mathematics and mathematical physics have placed him foremost in the ranks of mathematicians. His contributions to physics chiefly related to geometrical optics. The work which may be regarded as his masterpiece is the invention of an entirely new method of mathematical analysis, a non-commutative algebra, called by him *Quaternions* (1853). The method is extremely powerful, and particularly adapted to the solution of physical problems.

Joule. In 1837, the year of the invention of the electric telegraph, a young Manchester man, James Prescott Joule, then only nineteen years of age, began to publish his researches on relations between heat and energy. In 1840 he experimentally demonstrated the law that the heating effect of an electric current is directly proportional to the resistance of the circuit through which it flows, and also proportional to the square of the current flowing. In 1843 he presented his *magnum opus* to the Royal

Society. This was a paper "on the calorific effects of magneto-electricity, and on the mechanical value of heat." In this paper he showed that "an amount of energy equal to 772 foot-pounds will, if communicated to one pound of water, raise its temperature one degree Fahrenheit," in other words, he showed that a definite relation exists between heat and energy, and that a given amount of energy can be converted into a definite quantity of heat.

Joule's earlier papers show that the idea of a mechanical equivalent of heat had for some time occupied his mind, yet, in 1843, his announcement was far from being well received. The leading physicists at first regarded it as the product of a country youth's imagination. The first to appreciate Joule's work was Sir William Thomson, who was six years his junior. Others followed suit, and came to see that the country youth had unfolded to them one of Nature's grandest laws. To Joule, in England, and Von Helmholtz, in Germany, we owe the discovery of the law of "Conservation of Energy," a law which states that energy is in the same degree indestructible and uncreatable as matter.

Photo: Walker & Cockerell.

SIR CHARLES WHEATSTONE, F.R.S., BY SAMUEL LAURENCE.

(*National Portrait Gallery.*)

In the light of our present knowledge, Joule's work as a whole, the original of his ideas, the importance and generality of his discoveries, and their effect on the scientific world, place him side by side with Newton in the history of physical science.

ROBERT STEELE. Chemistry.

THE progress of chemistry is the best proof that science has no country. The history of English chemistry cannot be understood without continually referring to the discoveries of other lands. At the time of which we write the atomic theory of Dalton had already been confirmed by Gay-Lussac's discovery and by Avogadro's explanation of it, by the researches of

Dulong and Petit on heat, and by those of Mitscherlich on crystalline form. For the next few years the chief advance in theoretical chemistry lay in the direction of determining the true formulæ for chemical substances, and of making these

JAMES PRESCOTT JOULE, BY ALFRED GILBERT.
(By permission of the Corporation of Manchester.)

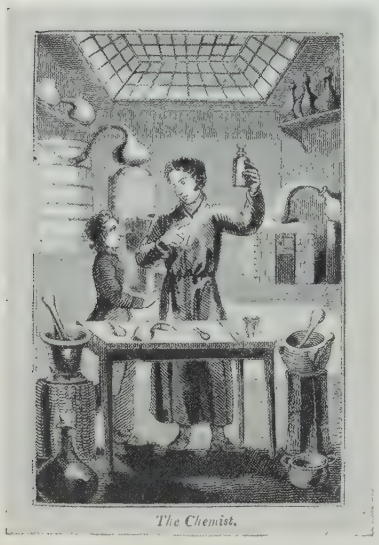
formulæ express what is known as to the properties it possesses. Water, as is well known, is expressed to-day by the formula H_2O—a system of notation introduced by Berzelius—in 1832 it was written HO, both these formulæ indicating that in analysis one part of hydrogen is found combined with, or is equivalent in combining power to, eight parts by weight of oxygen. Gerhardt and Laurent, two French chemists, were the first to definitely grasp the distinction between molecular,

atomic, and equivalent weights, and thus to prepare the way for the development of the atomic theory and restore the atomic weights of Berzelius. An English chemist, Thomas Graham (1805–69), gave important aid by his researches. It was at this period (1832) generally agreed that metallic oxides consisted of one atom of oxygen combined with one atom of metal, and that they united with one "atom" of acid to form neutral salts. Graham undertook the study of the phosphoric acids, and demonstrated that the "atom" of acid in these compounds combined with one, two, or three "atoms" of water, replaceable by metallic oxides. Liebig (1803–73) following up this line of argument, was at last able to lay down the definition that acids are compounds in which hydrogen is replaceable by metals —a theory which still, with modifications and additions, holds its ground. An addition to the science was made by Faraday's discovery of the laws of electrolysis (p. 255), which furnished chemists with a ready means of arriving at the chemical equivalents of the elements, and Wöhler's preparation of urea from ammonium cyanide had broken down the imaginary barrier which separated substances prepared in the laboratory from those elaborated by living organisms. The field was thus laid open, and students were not long wanting to cultivate it.

At this time there was in England no place at which a student of chemistry could learn the first principles of scientific investigation. It was not till 1837 that Graham came to London as a Professor in what is now University College; and, unquestionably, all who could do so went to Giessen to the laboratories which Liebig had established there, in imitation of Gay-Lussac. Among the more distinguished of his English students were Playfair, Williamson, and Frankland. It is to Williamson that we owe the next advance in chemical theory. Dumas had laid down a theory of type, in which he asserted that the character of chemical compounds depended on the number and arrangement of the atoms rather than on the nature of these atoms, in opposition to the theory of Berzelius, which regarded every compound as formed of two radicles such as into which it would be divided by electrolysis. Williamson's work on the relations of ether and alcohol to each other and water, and Hofmann's (1818–92) on the substances which he afterwards proved to be derivatives of ammonia, served to erect a theory of types on a

firmer base. At first all compounds were referred to these types, water and ammonia; but later theories have lessened its importance to teaching, and the danger of its over-use.

The British Association for the Advancement of Science, founded in 1834 by a group of scientific men, early attained its reputation as a combination of autumn junketing and serious work; but it never wrought better for English science than when it requested Liebig, in 1837, to draw up a report on the state of knowledge in organic chemistry. The report was not drawn up, but in its place he published "Chemistry in its Application to Agriculture and Physiology" (1840), a work in which the close relation between the nutrition of plants and the chemical composition of the soil and the air is finally established. The effect of that work on English chemical science is incalculable. A universal demand for schools of chemical training was made, and even the older universities opened laboratories. When, in 1842, Liebig visited this country the enthusiasm grew, and English country gentlemen, anxious for analyses of the soil of their farms, vied with enthusiasts for science in subscribing to the Royal College of Chemistry (1845–53).

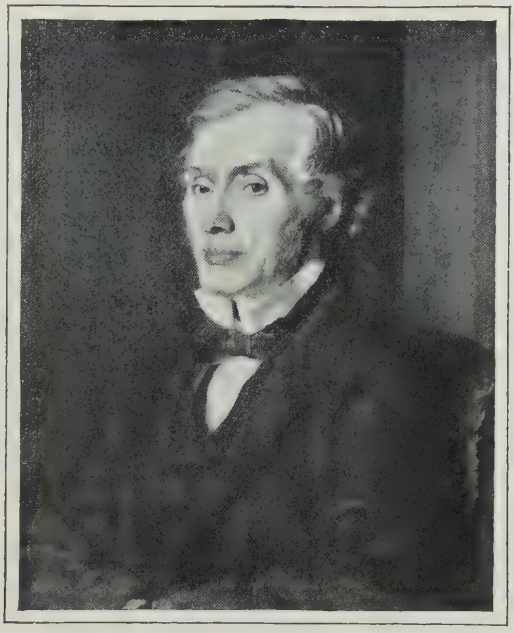


A CHEMICAL LABORATORY.
("*Book of English Trades*," 1832.)

The popular interest in chemistry led, however, to a more enduring result. A class of students had arisen round Graham capable and desirous of engaging in original work, and in 1841 he founded the Chemical Society, which has been associated since then with every development of the science in this country, and whose journal has been its chief organ, more especially since 1871, from which year it has included full abstracts of all papers appearing in other periodicals devoted

to the science. The last survivor of the original members, Lord Playfair, was Graham's pupil at Glasgow. An earlier but abortive attempt had been made to found a Chemical Society in 1832.

Liebig, on his return from England, summed up the situation by saying that the fault of Englishmen was to look exclusively



THOMAS GRAHAM, BY G. F. WATTS, R.A.
(By permission of the Royal Society.)

to practical results, and this weakness led to the fall of the first and greatest school of chemistry we have had in this country. The post of Professor was offered to Hofmann, one of the most brilliant of Liebig's pupils, and, on his acceptance, he at once set to work. The list of his students includes many of the best-known names of the day, and their work at once began to appear in the Journal of the Chemical Society; but it is curious to read in the reports of the college Hofmann's apologies for working on such useless substances as aniline, etc. It was soon found impossible to fulfil the promises in the prospectus

as to analyses for the subscribers, funds fell off, and the Royal College of Chemistry was absorbed into the School of Mines (p. 752).

But about this time another result of Liebig's work was seen in the foundation by Mr. (afterwards Sir John) Lawes of the Agricultural Station at Rothamsted (p. 483). He had carried on experiments in the fields since 1837 with important results to agriculture, more especially those on the manuring of turnips by superphosphates—mineral phosphates dissolved in sulphuric acid—and had taken out, as a result, a patent in 1842, which led to the foundation of an important chemical industry, but it was not until 1843 that the systematic work of the station began. From that time to the present it has rendered incalculable service to the progress of agriculture in the field, in the feeding shed, and the laboratory. Experiments have been carried on with root and grain crops grown continuously on the same plot with or without the aid of manures; on the rotation of crops, and on the result of the feeding of animals in producing meat, milk, and manure. To state concisely the main results of this work is not easy. They have made clear the object, method, and results of manuring, the scientific explanation of the rotation of crops, and of the principles which underlie the production of fat and of muscle in farm stock. Sir Henry Gilbert, who was associated with Sir John Lawes in this work from 1843, and continued it after his death in 1900,[1] was a pupil of Liebig.

D'ARCY POWER. Public Health, 1815-1846

THE public health at the beginning of the century was good, in spite of the most neglected sanitary conditions and the most systematic overcrowding. Wages were high, and work was constant so long as the war continued, but with the Peace of 1815 and the bad season of 1816 came a reaction. Typhus and relapsing fever appeared in the rookeries of London, and spread as an epidemic through England. Relapsing fever disappeared

[1 The station was carried on by Sir John Lawes at his own expense till 1889, when he endowed it with £100,000 and certain lands, and appointed trustees. In 1904 it was controlled by a committee of nine, four of them nominated by the Royal Society, two by the Royal Agricultural Society, the remaining three representing the Chemical and Linnean Societies and the founder's family.]

WHEAT GROWN YEAR AFTER YEAR ON THE SAME LAND AT ROTHAMSTED ENGLAND
PRODUCE OF 1878 THE THIRTY-FIFTH CROP IN SUCCESSION
MANURES PER ACRE PER ANNUM
PLOT 2 14 TONS FARM YARD MANURE
PLOT 3 WITHOUT MANURE SINCE 1839
PLOT 5 SULPHATES POTASH SODA MAGNESIA AND PHOSPHATE
PLOT 6 MIXED MINERALS AS 5 & 200 LB AMMONIUM SALTS =43 LB NIT
PLOT 7 MIXED MINERALS AS 5 & 400 LB AMMONIUM SALTS =86 LB NIT
PLOT 8 MIXED MINERALS AS 5 & 600 LB AMMONIUM SALTS =129 LB NIT
PLOT 11 MIXED MINERALS AS 5 & 550 LB SODIUM NITRATE =86 LB N
WHEAT GROWN YEAR AFTER YEAR ON THE SAME LAND AT ROTHAMSTED ENGLAND
PRODUCE OF 1899 THE FIFTY SIXTH CROP IN SUCCESSION
MANURES PER ACRE PER ANNUM
PLOT 2 14 TONS FARM YARD MANURE
PLOT 3 WITHOUT MANURE SINCE 1839
PLOT 5 SULPHATES POTASH SODA MAGNESIA AND PHOSPHATE
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SAMPLES OF WHEAT GROWN AT ROTHAMSTED, HERTS.

(*By permission of the Lawes Agricultural Trust.*)

about 1819, but typhus remained endemic; and there was a second epidemic in 1826–27, associated with the financial crisis of 1825. The autumn of 1826 was marked by an outbreak of fever which, from the account of the morbid appearances left to us by the physicians who attended the cases, we now know to have been typhoid. The disease was not then recognised as a distinct fever, for it was not until 1849–51 that Sir William Jenner drew particular attention to the distinctive anatomical lesions which now make its recognition a matter of everyday occurrence, and at the same time have led to its rational treatment. The ten years from 1830–40 were particularly unhealthy. Typhus, Asiatic cholera, small-pox, and influenza spread over the country in epidemic waves. The cause of these epidemics was not far to seek. Trade was getting worse and worse; the price of provisions rose steadily. Hygiene did not exist, and as yet the State took no interest in the public health. The poor, both in town and country, lived amongst the most filthy surroundings, and under the most demoralising conditions. Their standard of comfort was very low, and overcrowding was the rule rather than the exception. The sanitary condition of the wealthy classes was not much better, for the broad principles of drainage were less understood than they had been in Nineveh, and were certainly not as good as they were in Rome under Augustus. In Rome, at any rate, we know that the sewers were cleansed occasionally, for the magistrate, under whose auspices such a work was accomplished, would afterwards descend the newly cleansed channel in a boat; but no one ever heard of the sewers in this country being surveyed by any municipal authority. The sanitary appliances were of the rudest description; cesspools were frequent, and were usually placed in the basement of the houses; the water supply was abominable; the streets were badly paved, badly lighted, and badly guarded.

State Medicine.

The unhealthy decade was not without its uses. It brought home to the Government the shameful manner in which the State had hitherto neglected an important part of its duties. The appearance of Asiatic cholera at Sunderland in 1831 had led to the formation of a Board of Health, and the new system of registering births, deaths, and marriages came into force upon 1st July, 1837. The care of the public health, hygiene, or the science of State medicine was still unknown, and there was no

sanitary measure upon the statute books at the time of the queen's accession. The foundation of the science was laid in 1838, when (Sir) Edwin Chadwick, as Secretary to the Poor Law Commissioners, addressed a letter to Lord John Russell, the Home Secretary, pointing out that preventable disease was a cause of pauperism. The State further acknowledged its duties in relation to the prevention of disease when in 1840 it rendered penal the inoculation of small-pox, and established a system of gratuitous vaccination. It made further progress in the same direction when it began to consider the dangers attending burials within the limits of the various towns, though the practice was not prohibited until 1852. It was not until 1846 that a temporary Act for "the Removal of Nuisances and the Prevention of Epidemic Diseases" enforced the first and most elementary sanitary regulations. A still more important Act was passed in the same session, enabling local authorities to establish public baths and wash-houses. Lord Morpeth's "Health of Towns Bill," which may be looked upon as the foundation of State medicine, was introduced into Parliament in 1847; but, as it failed to pass the Commons, it was re-introduced in the following session, when it received the Royal Assent on the last day of August, 1848. Its provisions were first carried out by a central Board of Health, then (1858) by the Privy Council, and since 1872 by the Local Government Board. Sanitary legislation, at first confined to towns, was extended to the rural districts in 1872, and local sanitation is now administered by the "District Councils" under the Local Government Act of 1894.

H. C. JENKINS. Mining and Metallurgy, 1815-1846.

THE mining and metallurgical industries of the United Kingdom assumed a position of prime importance in the trade of the country at the beginning of the century. This they have maintained, so that in later years they have become an index of the national prosperity.

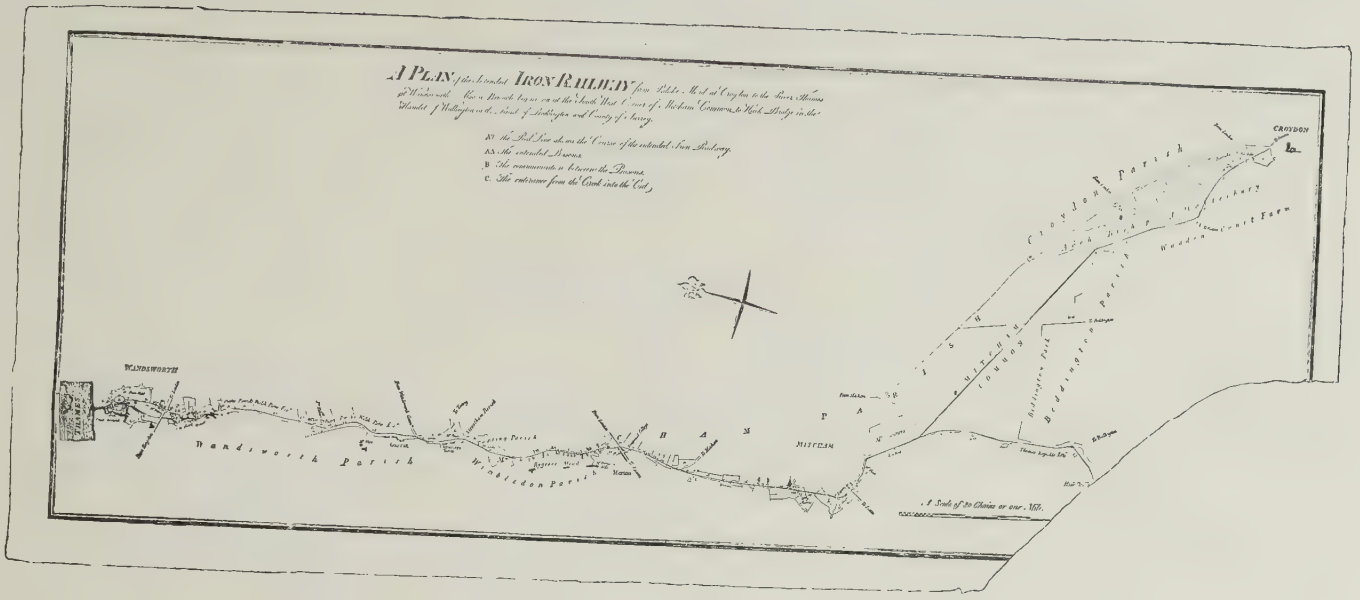
At the opening of our period, metal was daily displacing wood as a material for articles of common use. The inventive skill of men such as Arkwright, Watt, and Maudslay (Vol. V., pp. 414, 625 *seq.*, 813) had extended the use of the metals beyond the sphere of artistic or philosophical applications to that of durable and industrially useful machinery, possessing a degree

of accuracy of form and precision of movement hitherto unknown in the purely mechanical arts, whilst Newcomen and Watt had (Vol. V., pp. 426, 625) given to the world practical means by which the energy in fuel could be utilised in setting this improved machinery in motion. Thus manufacture was no longer limited by the resources of hand labour or of animal power, or by the restraints of place imposed by the use of water-power, while it was but just released from the grave restrictions and burdens imposed by the long French War.

Concentration of Industry.

For half a century the country had been experiencing the benefits due to a few good roads and canals made with the special object of trade in view. The waggon had been displacing the pack-horse, and when it is stated that each ton of goods carried on the backs of horses cost a pound sterling for every twenty miles, it will be seen how desirable some relief was from such an impost on trade, because the economical manufacture of goods by the aid of machinery, itself too ponderous to be readily portable, involves a considerable amount of carriage both of the raw material and of the finished product. At the beginning of the century, coal was one of the articles in connection with which the need of cheap carriage was severely felt, and the success of the Wandsworth and Croydon Tramway (1801 : p. 273) and other similar lines led to the further replacement of stone by iron as the material for roadways in the colliery districts. Several inventors were meanwhile busy with attempts to utilise the steam engine for the purpose of haulage. The new form of road, or rather tramway, was seen to offer special advantage to steam locomotion, on account of the more perfect and rigid service that it presented—a surface that was, moreover, nearly independent of meteorological changes. But the mechanical engineers had some difficulty in perfecting the locomotive engine, and by the time that Stephenson in 1828 demonstrated its success, industries on all hands had become so developed as absolutely to necessitate the assistance of this new means of transport to prevent their being crippled by cost of carriage.

At the beginning of the century, Great Britain occupied the fortunate position of having her mineral resources, as well as the new engineering industries, in a better developed condition than those of any other country. She had, moreover, the


A PLAN of the intended IRON RAILWAY from Pitlake Mead at Croydon to the River Thames at Wandsworth
A the Red Line shews the Course of the intended Iron Railway
AA the intended Branch
B the communication between the Branches
C the entrance from the Creek into the Cut
CROYDON
Croydon Parish
Wandsworth Parish
Battersea Parish
Battersea Fields
Battersea Rise
Wandsworth Common
Bridge
Scale of 80 Chains or one Mile

PLAN OF THE SURREY IRON RAILWAY.

(By permission of C. T. Davis, Esq., the Public Library, Wandsworth.)

command of the sea. Hence very much of the increase of trade came directly into our hands. Thus on every hand large and increasing quantities of metals, chiefly iron, as well as of coal, were then required, so that the rate of development of the coal and iron trades was for many years phenomenal. It will be better, for the sake of clearness, in a more detailed review to take the iron trade first.

Cast Iron.

Crude cast or pig iron is the most widely used metal at the present day in the industrial arts, sometimes as the material out of which articles may be formed by the operation of casting, but more generally as the substance from which the purer forms of the metal, such as steel of wrought iron, may be obtained, and it is easy to trace by the trade in pig iron alone the industrial progress that has taken place. But it must be remembered that this large industry is absolutely dependent on two others, coal mining, which indeed will be seen to be of even greater importance than the iron trade, and ironstone mining, which is of nearly equal importance with it.

The annual production of pig iron has been steadily increasing in Great Britain for several centuries. For the year 1806 there were no less than 161 furnaces in existence, producing 243,800 tons of pig iron. By the year 1827 the number of furnaces had increased to 284, and the annual output to 690,000 tons, the South Wales and the Staffordshire districts each contributing about one-third of the total. Except in Scotland, where raw coal was the fuel, the use of coke in the furnaces had become almost universal (Vol. V., pp. 417, 631), though singularly enough a solitary charcoal furnace has been, and still is, worked at Backbarrow in Cumberland [1904].

The Blast Furnace.

In following the development of the industry it must be remembered that the blast furnace producing cast iron has two functions to perform. It has to reduce the ore first to the state of metal. This is effected in the central and upper part of the furnace by the united action of carbon and of carbonic monoxide at moderately elevated temperature upon the ore, which may be considered to be always an oxide of iron, for when carbonate of iron is the ore it speedily becomes oxide by the simple act of heating. The reduced metal, now in a state of fine division, must then be melted, during which operation it takes up carbon and becomes cast iron; at the same time the ash of the coke and

the foreign matters from the ore fuse, and can be withdrawn as a slag. It must be further noted that the melting requires a very high temperature, such as is only attained at the base of the furnace where the blast of air is admitted.

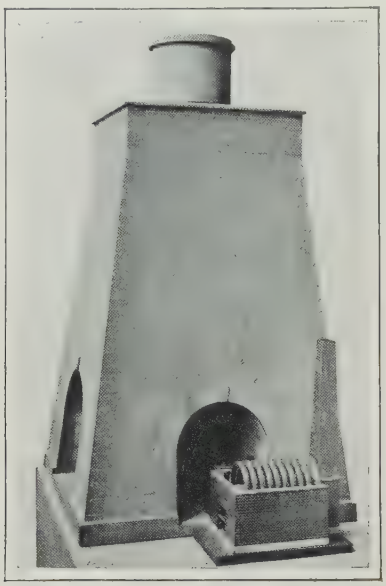
The very early iron furnaces did not produce cast iron, save as an accidental product, but a steely wrought iron that never melted but was picked out of the furnace after the operation was finished. This peculiarity of their product was due to the fact that the furnaces, which were, comparatively speaking, very small, employed charcoal as fuel, and this had great power of reduction, but the temperature attained was insufficient to melt the iron, or to highly carburise it during the few hours occupied by the operation. But in the case of larger blast furnaces having cast iron as the intentional product, in order to carry out the operation with as small an expenditure of coke as possible, what is required is the attainment of a very high temperature by the complete combustion of the coke to carbon dioxide at the base of the furnace, so as to get the highest possible temperature for the actual melting, as well as a suitable though not excessive production of reducing gases in the upper portions of the furnace. Up to about the year 1828 a gradual improvement in the size and shape of the furnaces was made, but without any radical change in practice. In that year Neilson, though for inadequate reasons, thought it would be of advantage to feed all kinds of furnaces with hot air, and he obtained letters patent for the scheme. Heated air had, however, been experimentally used by others at the Bradley Iron Works as early as 1804 for blast furnaces, and its use abandoned. But the use of heated air enables a high temperature to be obtained without an excessive production of reducing gases and consequent waste of fuel in the furnace, and when Neilson's improvement was applied to the Scotch blast furnaces, a notable saving of coal was effected, amounting in many instances to a reduction of eight tons of pit coal per ton of pig iron to about 5¼ tons, and representing frequently an economy of £1 sterling for that amount of product. In English furnaces, where the coal was generally coked before it was used, the saving naturally could not be so great, but it was 20 per cent. The production increased to 1,309,000 tons in 1840, when 490 furnaces were in existence in the country, and 402 of these were at work, the

Hot Blast

Growth of the Iron Trade.

amount of coal required diminishing to an average of about $3\frac{1}{2}$ tons per ton of iron. In 1843 the rapid extension of the railway system caused a large increase in the demand, and the production was 2,000,000 tons in the year 1847, increasing five years later to 2,700,000 tons, when 497 furnaces were working out of a total of 655. The increasing yield per furnace was due partly to an increase in size, but partly to the attention now commencing to be paid by the ironmasters to the study of the scientific problems presented in the course of their work. Up to this time the combustible gases, necessarily present in the upper part of the blast furnace for the purpose of reducing the ore to the metallic state, had been invariably allowed to burn as they issued from the mouth of the furnace, but in 1845–48 Budd thought to utilise the gas by withdrawing it from the furnace immediately below the top, and to burn it in his stoves for the purpose of heating the air for the hot blast. He found that he had enough gas and to spare, so that another large economy could be effected. Soon after this the "closed" top to the furnace was invented, and then practically all these gases could be usefully burnt, either in the hot-blast stoves or under the steam boilers, for the blast engines. Strange as it may seem, it was many years before the use of the closed top became general, yet in the end the advantages of its use have been universally recognised, and the impressive, but useless and expensive, spectacle of a quarter of the fuel employed burning in absolute and injurious waste, is to be seen no more. At about this date, also, the increasing size of the furnaces led to the adoption of

Use of Waste Gases.



MODEL OF A SOUTH WALES BLAST FURNACE BEFORE 1850.
(*Victoria and Albert Museum.*)

ironwork in their structural casing in the place of brickwork or of masonry. Now the change is complete, and only the fire-resisting part is made of brick.

Coal. The activity in the manufacturing industries has demanded and, indeed, has mainly resulted from, a liberal supply of fuel, large quantities of which are required in the metallurgy of iron, whilst the steam engine is used with the deliberate view of substituting the energy derived from fuel for that derived from animal labour. Coal had displaced most other forms of fuel in this country by the beginning of the century, and this largely accounts for the industrial activity itself, for it is computed that a seam of coal two feet thick and an acre in extent will supply as much energy as could be obtained by burning all the trees that could be grown in the same sized piece of land for ten thousand years.

LORD FARRER. The Railway System. Travellers between London and Brighton may notice to the west of the line near Purley an embankment long disused. Few, however, know that this is part of the first public "iron railway" for which an Act of Parliament was obtained in this country, by name the "Surrey Iron Railway Company," formed in 1801, to carry coals from Wandsworth to Croydon and Reigate, and to bring back stone and lime to be shipped on the Thames. But though this and several other small lines were formed at the beginning of the century, to be worked by horse power only, it was not until the period that we are now considering that the foundations of the present English railway system were laid.

George Stephenson. The early history of our railways is inseparably connected with the picturesque personality of George Stephenson, who was born in 1781 at Wylam Colliery, near Newcastle, of parents too poor to afford him as a lad even the schooling necessary for learning to read and write: the family of eight souls, indeed, dwelt in one room of a cottage. He lived not only to realise great wealth himself, but to see the face of England so much changed by the invention which his own industry had the chief share in developing, that it was actually cheaper—to use his own words—for the poor man to go by steam than to walk. The time was very favourable. The close of the French war had opened the seas to English commerce. A vessel moved by steam

power was sailing on the Clyde by 1812; another crossed the Atlantic in 1819 (p. 452). Between 1821 and 1824 Liverpool exports had increased from 71,000 to over 1,000,000 tons. The inland canal navigation companies were quite unable to cope with the traffic that was pressing upon them. They attempted to meet the difficulty by the most foolish and unpopular of all measures —that of a general raising of rates for conveyance. And so we find that the first survey of a railway between Liverpool and Manchester was made, principally at the expense of Joseph Sandars, a Liverpool merchant, in the year 1822, and the first prospectus issued October 29, 1824. It contained these words: "It is competition that is wanted, and the proof of this assertion may be deduced from the fact that shares in the old Quay Navigation, of which the original cost was £70, have been sold as high as £1,250."

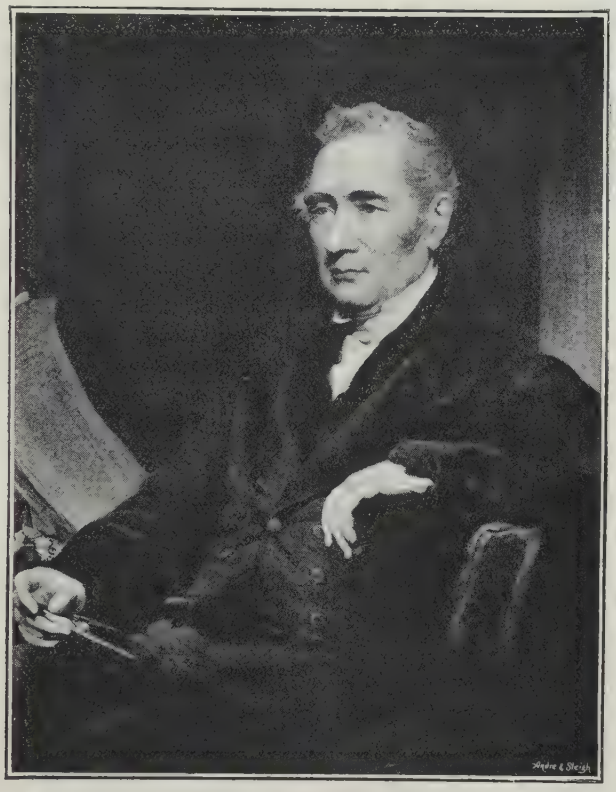
The Locomotive.

During all this time George Stephenson had been working quietly at the improvement of his locomotive engine in Northumberland. He had long been convinced that steam power was destined to supersede other modes of traction. As far back as 1769, a French officer named Cugnot had constructed a steam locomotive, which worked on ordinary roads in Paris. Trevithick, a Cornishman, had also constructed a successful road locomotive, which he exhibited in London in 1803, and a tramway locomotive—the first in Britain—which worked upon the Merthyr tram-road in 1804. Blenkinsop, of Leeds, followed with another locomotive in 1811, to be used at his colliery at Leeds in lieu of horses. Blackett, of Wylam, a village near Stephenson's home, was at the same date constantly experimenting; and Stephenson, then an engineer at Killingworth, was as constantly following the experiments. At Killingworth, Stephenson constructed in 1814, for Lord Ravensworth, his first locomotive, "Blucher," and devoted the next two years to improvements in design of both engine and track; and he had proved in practice on these coal roads the superiority of locomotive over any other form of traction by the date of the inception of the Stockton and Darlington Railway.

The Stockton and Darlington Railway.

This line was originally intended only for the conveyance of coals and goods to be hauled by animal power or stationary engines; and the first application, backed by Edward Pease and many of the Quakers of Darlington, for power to construct it,

was made to Parliament in 1818. It was defeated by the Duke of Cleveland, on the ground that it would interfere with his fox-covers. In 1821, however, the Bill passed, and in 1823 George Stephenson was appointed engineer. At his instigation,



GEORGE STEPHENSON, AFTER H. P. BRIGGS, R.A.

an amended Bill was obtained, a clause of which gave the company power to work the line by means of locomotive engines, and to convey passengers—the first Act in England to give such power. The year 1823, therefore, may be looked upon as the real beginning of the modern railway era in England. For sanction was given by Parliament—and it is necessary to note that such sanction was, and is still, essential to undertakings of any magnitude, because Parliament alone can compel any

individual in this country to part with his land against his will —to a line forty miles long, and estimated to cost a quarter of a million sterling.

The Liverpool and Manchester Railway.

From that day to this, moreover, though improvements have been made in details of the locomotive, the principle of George Stephenson's engine remains unaltered, and his machine, which at the opening of the Liverpool and Manchester Railway in 1830 carried Huskisson's body, maimed by a deplorable accident, at the then unheard-of speed of 36 miles an hour, had only been enabled to double that pace in 1885, while the reduction of fares during the same period between the same places was only from 4s. to 2s. 6d.

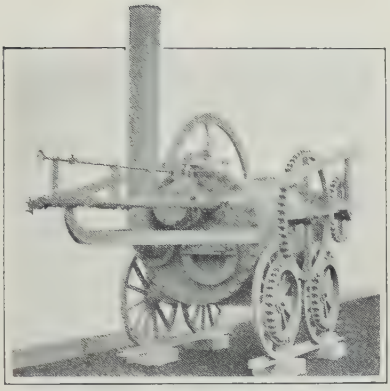
Great as was the success of the Stockton and Darlington line, public attention was not thoroughly aroused until the project of the Liverpool and Manchester Railway came to the front in 1824. By a fortunate chance George Stephenson was appointed engineer, as he was strong enough to withstand attacks of every kind. What these attacks were, even among the most educated class, may be gauged by the following words of a *Quarterly* reviewer of 1825, commenting upon a proposed line to Woolwich, which was to go at twice the speed of stage coaches :—

> "The gross exaggeration of the powers of the locomotive steam engine . . . may delude for a time, but must end in the mortification of those concerned. . . . We would as soon expect the people of Woolwich to suffer themselves to be fired off upon one of Congreve's ricochet rockets, as trust themselves to the mercy of such a machine, going at such a rate. We would back old Father Thames against the Woolwich Railway for any sum."

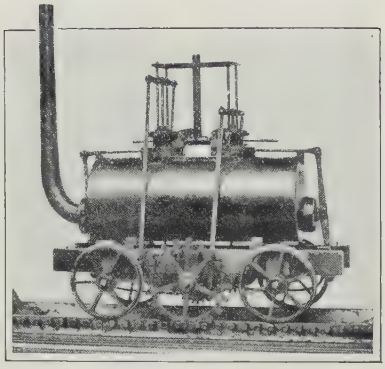
Stephenson himself, in evidence given before the Parliamentary Committee, had to limit his expectations of the speed of the locomotive to fourteen miles an hour. The opposition, backed by the landed and canal interests, was too much for the first Bill, and it was thrown out; only to be reintroduced and passed in the next year (1825).

Steam Traction Wins.

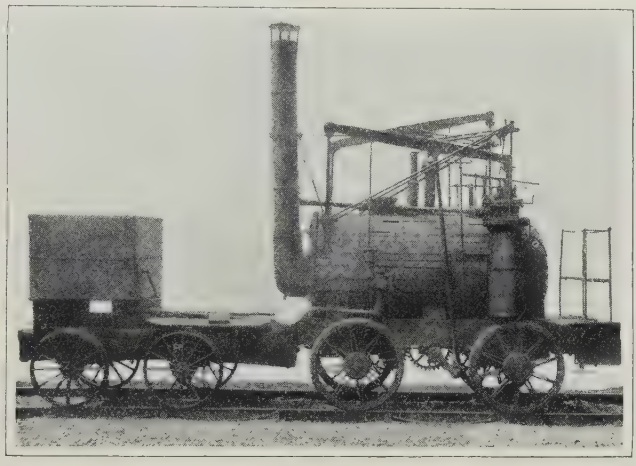
Even now the directors were undecided as to the nature of the power to be employed, and it needed the utmost persuasion of their engineer to give a fair trial to the locomotive. Into the details of that remarkably interesting race on October 6th, 1829, at Rainhill, between the three locomotives, "Rocket," "Novelty," and "Sanspareil," we have not space to enter, but the prize of £500 was won by Stephenson's "Rocket," which attained a



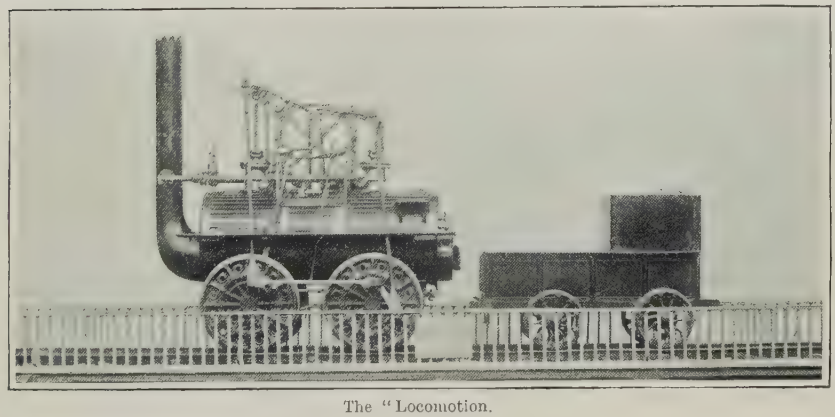
Trevithick's Tram Locomotive.
(*By permission of the L. & N.W. Railway.*)



Blenkinsop's Engine.
(*By permission of Messrs. Greenwood & Batley.*)



"Puffing Billy."

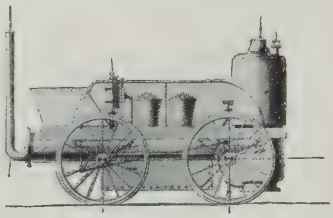


The "Locomotion.

EARLY LOCOMOTIVE ENGINES.
(*Victoria and Albert Museum.*)

speed of 29 miles an hour, and the power to be employed for tractive purposes was finally settled. The Liverpool and Manchester Railway—now part of the L. and N. W. system—was opened on September 15th, 1830, in a scene of great public excitement. The financial results were highly satisfactory, the £100 shares shortly rising to £200, and the traffic increasing beyond the wildest dreams of the promoters, so much so indeed that the whole of their limited stock of engines was employed in passenger traffic, a branch of business which had scarcely been considered in the prospectus.

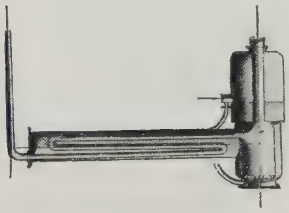
SECTIONAL PLAN OF THE "SANSPAREIL."



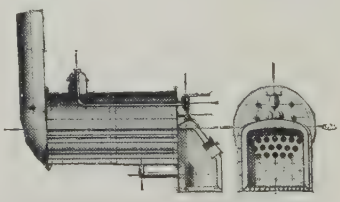
DRAWING OF THE "NOVELTY."

Railway Development.

Meanwhile the first of the waves of speculation which have occurred since at varying intervals, had swept over this country. Railways seemed to offer such a fine security, that we find a capital of nearly £22,000,000 was demanded for them in 1824–25. Even though only about £220,000 was actually paid up, the figure, considering that liability was then unlimited, is highly remarkable. The great success of the Liverpool and Manchester led to the foundation of all the principal lines at present existing. The Act of the London and Birmingham, the first long line—112 miles in length—was passed in 1833. It had in the previous session (1832) passed a second reading in the Commons by a majority of 79, and also Committee and third reading by large majorities, but had been rejected in the Lords, a rejection which, says an early writer, stirred up a most indignant spirit in the land. "There is a blindness which



SECTIONAL PLAN OF THE "NOVELTY."

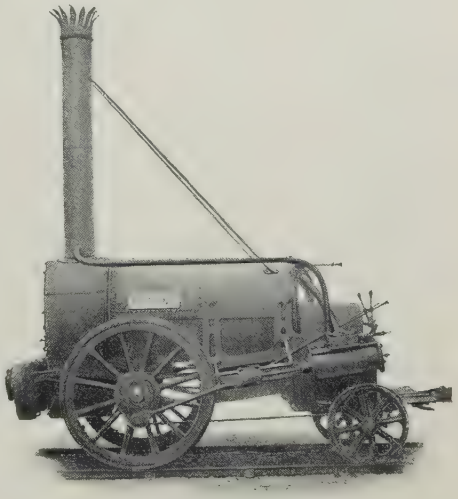


SECTIONAL PLAN OF THE "ROCKET."
(*Victoria and Albert Museum.*)

THE "SANSPAREIL."
(*Victoria and Albert Museum.*)

will not see, and how shall it be expected that they should be able to calculate, whose schooling has gone little beyond counting the feet of a hexameter verse?"

Notwithstanding similar opposition from Eton and Oxford, the Great Western Bill passed in 1835, both seats of learning managing to push the line away, the first as far as Slough, the second as far as Didcot. The Rev. Edward Coleridge was asked whether the railway would not increase the trade of Windsor. "Trade," said he; "what trade has Windsor, except Windsor soap, and that is made at Egham?" The Act forbade any station on the G.W.R. within a certain distance of Eton College. When the rails were perforce extended to Eton and Oxford, clauses were inserted in the Acts[1]—to this day unrepealed—compelling policemen to patrol the line to prevent the access of Eton boys, and giving the officers of the University of Oxford access at all times to the railway. Similarly in the



THE "ROCKET."
(*Victoria and Albert Museum.*)

[1] Local Acts, 1835, c. 107, s. 100; 1843, c. 10; 1845, c. 184, s. 143; 1846, c. 135, s. 24.

Eastern Counties Act,[1] a clause, still unrepealed, forbade the company to run trains to Cambridge at certain hours on Sundays on pain of forfeiting money to Addenbrooke's Hospital. These instances are quoted to show the strong opposition which was met with and had to be conciliated, for in more modern Acts such clauses interfering with public convenience for the sake of private institutions are almost unknown, if we except the case[2] of Lord's Cricket Ground, which almost prevented the Great Central Railway from entering London.

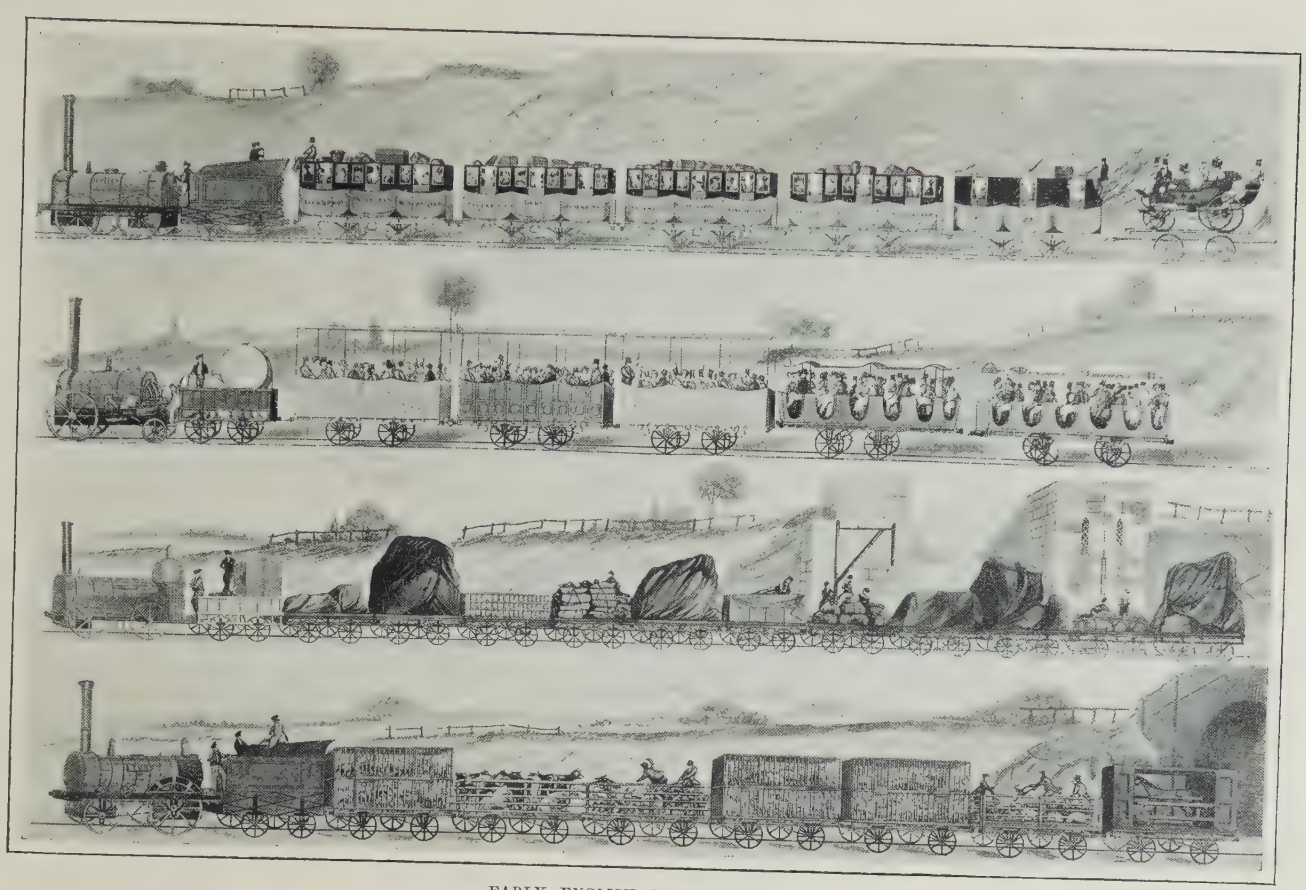
Battle of the Gauges.

The Great Western Railway demands attention for other reasons than the opposition of the learned bodies of Eton and Oxford. It is intimately connected with the name of Brunel, its engineer. A man of daring and ingenious mind, he was quite deficient in the special faculty which George Stephenson possessed, of giving due weight to the commercial side of engineering. The gauge of the English railway had been determined by the width of the coal tramroads near Newcastle to be 4 feet $8\frac{1}{2}$ inches. Stephenson saw from the first the importance of keeping all English railways the same width. When his friend Joseph Locke was constructing the Canterbury and Whitstable line, he came to ask Stephenson what gauge he should adopt. "Make it of the same width as mine," said George Stephenson, "though they may be a long way apart now, depend upon it they will be joined together some day." But to Brunel's mind the very fact of one system being adopted was an inducement to experiment upon the advantages of another. Other railways were of 4 feet $8\frac{1}{2}$ inches gauge; he persuaded his directors that 7 feet was a better width. Other railways used cross sleepers; his must be longitudinal. Other lines had up and down stations on each side of the line and the passengers crossed to them; he must have his stations on one side of the line only, while the trains crossed instead of the passengers. Steam had proved its success as a tractive power; Brunel maintained that the atmospheric system was better for steep grades, and tried it with disastrous effects on the South Devon line.

Brunel's Ideas.

All these eccentricities experience has condemned, and no sober investigator can doubt that time has shown Brunel to have been completely wrong, and to have wasted large sums of money.

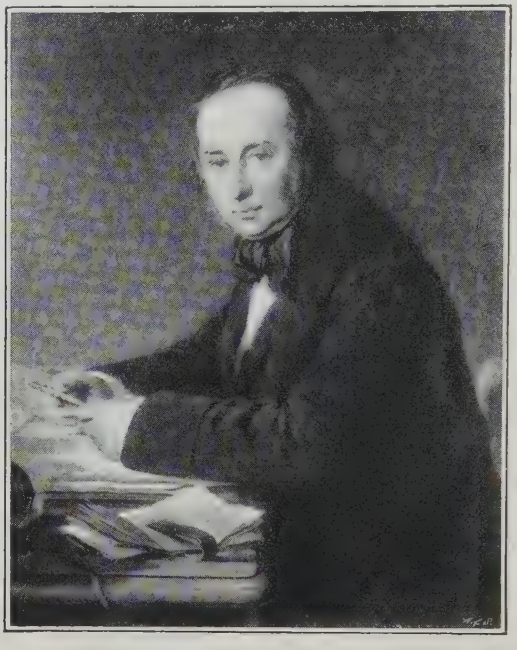
[1] 1844, c. 62; 1862, c. 223, s. 140. [2] 1893, c. 1, s. 52.



EARLY ENGLISH ROLLING STOCK.

(*From prints of* 1833 *at the Victoria and Albert Museum.*)

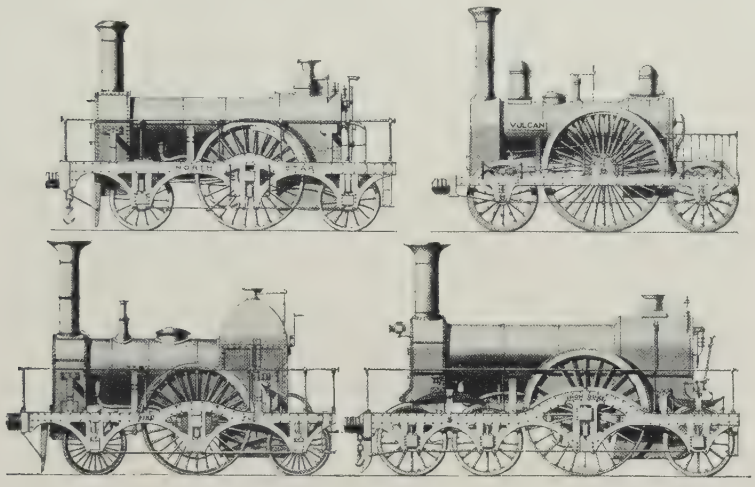
But from the historical point of view the most astonishing fact is that not only Parliament and the public, but even the directors of the Great Western Railway themselves, should have had no inkling of the exchange between the various parts of the kingdom which railways were to produce. It was stated and firmly believed by the advocates of the wider gauge, that the



ISAMBARD KINGDOM BRUNEL.
(*Engraved by Henry Cousins, after J. C. Horsley, R.A.*)

district which the G.W.R. served was entirely separate from the rest of England, and therefore that the transhipment necessary for goods would be infinitesimal. The idea that in fifty years through expresses would be running from Glasgow to Plymouth, or from Birkenhead to Bournemouth, entered their heads as little as the necessity for through goods and coal waggons from the West of England stations to and from the London docks and other cities and ports, if their district were to meet the competition of the rest of England on equal terms. A clearer proof does not exist that the internal trade of the

country was in its infancy. The question of gauge was not dealt with by Parliament until the year 1846, when an "Act for Regulating the Gauge of Railways" (9 & 10 Vict., cap. 57) was passed, fixing 4 feet 8½ inches for future English and Scotch, and 5 feet 3 inches for Irish, railways. This Act was the outcome of the report of a "Gauge Commission" of the previous year, which conducted a careful inquiry. The experiments included



GREAT WESTERN ENGINES.

(*From a print in the Victoria and Albert Museum.*)

very interesting tests of speed on the broad gauge Great Western between Paddington and Didcot, and narrow gauge Great North of England[1] between York and Darlington, in which the broad gauge attained an average speed of over 50 miles an hour with a train of 80 tons, the narrow gauge with a train of the same weight attaining 44 miles. On grounds other than those of speed, however, the Royal Commissioners recommended the narrow gauge for future railways. The wisdom of their view was confirmed when the Great Western in 1892 converted the only remaining broad gauge sections of its system to the normal width.

No very special incidents marked the passing of Bills for

[1 The company is still extant, but its line is part of the North-Eastern system.]

our other great London lines, which occurred at the following dates :—London and Birmingham, 1833; London and Greenwich, 1833; London and Southampton, 1834; London and Croydon, 1835; Great Western, 1835; South Eastern, 1836; Eastern Counties, 1836; London and Brighton, 1837; Great Northern, 1846; London, Chatham and Dover, 1860; Midland, 1863; Manchester, Sheffield and Lincolnshire (now Great Central), 1893.

The Crisis of 1837.

But the railway mania of 1836 and the subsequent panic have been so overshadowed by the greater mania and panic of 1845, that it is well to recall them. Almost all the projects of 1845 were mooted in 1836, and the crash which followed in 1837 was one of the worst known. "Consols fell 4 per cent. . . . In Manchester and its vicinity 50,000 hands were unemployed for six months. At Paisley 20,000 workmen were idle. At Glasgow nearly half the labouring classes were idle."[1] Nevertheless all the great lines were being built, and as they opened took the place of roads as the real highways of the country. The mails were sent by train between Manchester and Liverpool from 1830. Each succeeding year saw the death of some celebrated coach with the extension of the rails. In 1841 died the Brighton, in 1842 the Glasgow and Edinburgh, in 1843 the last Southampton coach. The Queen made her first journey on the Great Western on June 18th, 1842; the Prince Consort had used the line some time before this.

Railway Legislation.

Parliament began to see that some general legislation was necessary. The Railway Regulation Act, 1840, reciting that "it is expedient for the safety of the public to provide for the due supervision of Railways," handed over certain general powers of regulation to the Board of Trade. This was followed by various Acts intended to secure the safety of the public, the most important of which is the "Railway Clauses Act, 1845," incorporating the provisions usually introduced into each private Railway Act into one General Act.

These Acts, however, did not give to a Government Department any considerable powers. The reason is obvious—that in Great Britain alone, among European countries, no penny of Government money had been contributed to railway enterprise, and therefore there was no justification for claiming the control exercised abroad. The powers of the Board of Trade were—

[1] Francis, vol. i., p. 301.

until the year 1889—limited to securing safety to the public, and they could only interfere *before* lines were opened. In Parliament itself the railway interest was so strong that the Act now known as "The Cheap Trains Act, 1844"—introduced by Mr. Gladstone in a speech in which the remarkable words occur, "I would no more trust the railway proprietor on railway matters than I would Gracchus speaking of sedition," and backed by the arguments of Sir Robert Peel—is a mere skeleton compared to the Bill as originally drafted. It did indeed attain one object—that of showing the railway companies the value of cheap fares; and it also gave Government the option of purchasing all future railways in twenty-one years—an option not exercised owing to the adverse report of perhaps the most important inquiry into railway matters ever made in this country, the Royal Commission of 1865-67, presided over by the late Duke of Devonshire. We have said that the Act of 1844 taught the railway companies the value of cheap fares. A contemporary says: "The third-class passenger down to 1845 had no legal status at all. Many companies would not carry him at any price; others put him in an open goods truck, with movable seats placed across it, and charged him 1½d. a mile for the luxury too. He was conveyed with other unclean animals by cattle trains, he was shunted about in his bufferless box for hours, and when at last he reached his destination it was to see a notice that 'the company's servants are strictly ordered not to porter for wagon passengers.'"

The Cheap Trains Act.

But in 1844 it was enacted that along every line one train each way daily must be run at an inclusive speed of not less than twelve miles an hour, conveying passengers in covered carriages at a penny a mile. The companies soon began to find that this cheap traffic, against the compulsory carriage of which they had vigorously protested, was the most profitable branch of passenger business, and continuous improvements were made in the speed and comfort of conveyance from that date until 1872, when the voluntary action of the Midland Railway in admitting third-class passengers to all trains without exception completed the revolution in travel. Indeed, the figures were such as no sensible business men could overlook.

The table of decennial figures given below, which is taken from the Parliamentary returns, is perhaps the most remarkable

testimony that exists to the democratic tendency of the railway. The first row of figures—viz. for 1845—is for the year *before* the Cheap Trains Act came into force, when there was no compulsion to convey third-class passengers. Between 1845 and 1890 the

A PRIMITIVE THIRD-CLASS CARRIAGE, STILL RUNNING, LATE IN THE NINETEENTH CENTURY, ON THE BODMIN AND WADEBRIDGE LINE.

(From a photograph, by permission of the London and South-Western Railway Company.)

first-class receipts just doubled, whereas the third-class receipts became 32 times as large.

GROWTH OF PASSENGER TRAFFIC—UNITED KINGDOM.

Year.	Numbers.				Receipts.			
	1st Class.	2nd Class.	3rd Class.	Mixed Classes.	1st Class.	2nd Class.	3rd Class.	Mixed Classes.
					£	£	£	£
1845	5,474,163	14,325,825	13,135,820	855,445	1,516,805	1,598,115	651,903	209,518
			3rd & Parly.				3rd & Parl.	
1850	7,734,728½	24,226,668½	34,797,723	81,055	1,969,246	2,594,817	1,899,739	1,470
				Season Tickets.				Season Tickets.
1860	20,625,851	49,041,814	93,763,013	47,894	3,170, 935	3,944,713	4,162,487	272,807
1870	31,839,091	74,153,113	224,012,194	...	3,948,812	4,925,542	7,473,727	686,488
1880	38,767,926	65,034,870	500,082,229	502,174	3,944,033	3,530 391	14,830,961	1,456,274
1890	30,187,067	62,859,854	724,697,125	1,259,221	3,193,691	2,645,705	21,142,847	2,316,384

Speculation of 1845.

The railway mania of 1845 and the rise and fall of Hudson, the "Railway King," have attracted, perhaps, more attention than they deserve. The existing railways had been doing well, the London and Birmingham, the Grand Junction and the York and North Midland paid 10 per cent., the Stockton and Darlington,

15 per cent. But no one expected in 1844 the wild speculation that was to follow in 1845 and 1846. In 1844 797 miles, in 1845 2,883 miles, and in 1846 4,790 miles received Parliamentary sanction. The streets near the stock exchanges were impassable, the gambling fever seized on all classes. From a return made to the House of Commons, it appears that among the dealers in railway undertakings were 900 lawyers, 364 bankers, 257 clergymen, 157 members of Parliament. When the crash came in October, it involved literally thousands in ruin. The collapse of 1846 and the quiet decade which followed mark the end of the first period of English railway history. The interest also shifted from the construction of railroads to problems connected with their working. It is true that in 1885 the mileage of line in the United Kingdom was eight times that of 1845—the figures are accurately, 2,441 in 1845, 19,169 in 1885—but the advance of engineering skill has made railroad building merely a question of money.

The economic and social effects of the new power were felt, and the interest shifted from engineering to that of policy and rates. Cheaper steamships, combined with free trade, and the extension of pioneer railways into the heart of the American

KING HUDSON'S LEVÉE, 1845.

(Reproduced by special permission of the Proprietors of "Punch.")

continent, enabled countries more favoured than our own to send us corn at a price with which our farmers could not compete. Labourers could leave their old homes to seek for work in towns or in new countries. As the competition of the sea influenced

three-fifths of British rates[1] the tariffs often appeared illogical, and presented anomalies real or apparent, which caused a strong outcry from an industry now depressed, but once so powerful and prosperous as that of British agriculture.

Railways and the State.

Many thought that the remedy was to be found in State purchase and the adoption of an absolutely equal system of rates. It was feared that the power of these "gigantic monopolies" as they were called, would be too great, and between 1844 and 1881 no less than six Royal Commissions or Select Committees of Parliament examined into the general question. Previous Committees had sat in 1836, 1839, and 1840. These six were—a Committee of 1844 (Mr. Gladstone's); a Committee of 1846; a Commons Committee of 1853 (Mr. Gladstone's and Mr. Cardwell's); a Royal Commission of 1865–67 (Duke of Devonshire's); a Joint Committee of 1872; a Committee of 1881–82. A Joint Committee on Railway Rates also sat in 1892–93, and a House of Commons Committee on the same subject in 1894.

From the Committee of 1844 onwards the general principle of Parliament has been to declare that the Companies have no special vested interest. "Nothing in the nature of a vested interest" . . . says the 1844 report, "ought to be recognised by Parliament as attaching to existing railways."

The engagement between the promoters and the public "conveys to the promoters no right," says the Report of 1853, "that these privileges shall be exclusively maintained when they cease to be consistent with the general advantage."

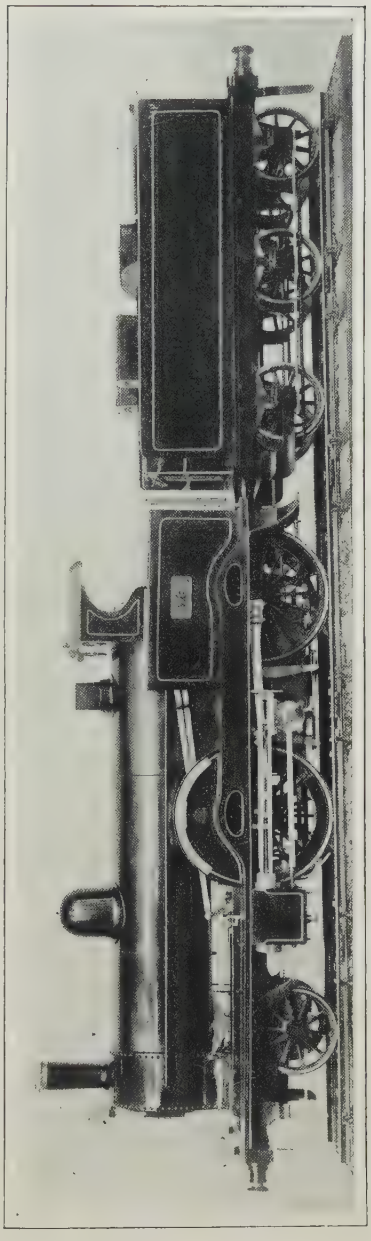
The Royal Commission of 1865–67 reports: "When a railway company comes forward for additional powers, Parliament shall take that opportunity of revising the maximum rates of conveyance, as it may appear reasonable."

In this, as in all other departments of English history, we find the vindication of the absolute supremacy of Parliament. From the days of Sir Robert Peel, who, in the introduction in 1842 of a Bill to regulate railways, stated, "I have reason to doubt very much whether all the railway companies and railway proprietors in the country would have the power to prevent Parliament from adopting any effectual regulations they thought fit," to our own day, England has seen no such difficulties

[1] *Vide* Report of Joint Committee of 1872.

between the State and the Companies as those which led in America to the institution of the Interstate Commerce Commission.

Not that our Railway Commissions have attained in all cases an unqualified success. Their history is curious. In 1840 and 1842 the Board of Trade was given certain powers of control in the interests of public safety. In 1844 a separate Commission was appointed whose main duty was to report upon new railway schemes. This impossible task led to the jealousy of Parliament, and the first "Railway Commission" died in a year. In 1846 another was appointed with far less powers, which also died of inanition after five years. The great Railway and Canal Traffic Act of 1854—the result of Gladstone's and Cardwell's Committee of 1853 — virtually transferred railway litigation to the ordinary Law Courts (the Court of Common Pleas), and in many directions was a real success. It failed, however, in technical questions, and the result of the Joint Committee of 1872 was the passage of the Railway Regulation Act, 1873. This appointed a Railway Com-



MODEL OF A LONDON AND NORTH-WESTERN RAILWAY ENGINE, 1885.
(*Victoria and Albert Museum.*)

mission of three members, one a railway man, one a lawyer (by the Railway and Canal Traffic Act of 1888, 36 & 37 Vict., cap. 48, the lawyer is to be a judge of the Superior Court), and one other, who were to decide questions arising under the Act of 1854, and subsequent Acts. On questions of fact its decision was to be final; on questions of law it was subject to appeal. This Commission, with some alterations in its duties and powers made by the Act of 1888, has continued until now, and if it has not satisfied all the expectations which were formed of it, has at any rate been better than anything that has gone before.

With all the faults of our English system of purely private enterprise tempered by competition, the controlling power of Parliament, though frequently grumbled at, has never been seriously denied by these gigantic corporations, whose capital in 1895 exceeded that of the National Debt by more than 300 millions sterling. It is possibly for this reason that the movement in favour of State Railways has made so little progress in England. The waves of State Socialism have at various times swept part or the whole of the railway system of France, Italy, Germany, Austria, Belgium, and most other countries into the net of the State, but in England alone, hitherto, the movement has had no serious support. And as long as the words of the last Committee of Parliament which has reported on the question hold good, our present system seems likely to remain unaltered. The words were as follows:—

"Your Committee, in conclusion, reports that, on the whole of the evidence, they acquit the railway companies of any grave dereliction of their duty to the public."

R. E. PROTHERO. Agriculture, 1832 1846.

The Distress Continues.

In the first four years of this period, the agricultural distress in which the country was plunged after the peace of 1815 continued with little or no abatement. Landlords with mortgages or rent-charges on their estates were ruined; tenants, farming on borrowed capital, became parish paupers; bankruptcies, seizures, executions, imprisonment for debt, were still universally prevalent. Rents fell into arrear; tithes and poor rates remained unpaid; labour-bills were reduced; improvements were discontinued; live-stock dwindled. Tradesmen, innkeepers, and shop-

keepers, who depended on farmers as their principal customers, were involved in the same ruin. The failure of numerous country banks added to the distress of rural districts. Misery bred discontent, and discontent created disturbances which were fostered by political agitators. While the Luddites broke up machinery, "Swing" and his proselytes were at work from Dorsetshire to Lincolnshire. Gangs of labourers avenged the fancied conspiracy of farmers by burning stacks and ricks, or by wrecking the shops of butchers and bakers.

SWING, THE RICK-BURNER.

It was on the clay farms that the distress was most acutely felt. Here, even on large holdings, the use of manure was almost discontinued; less capital and less labour were expended on the soil; wet seasons prevented the farmers from getting on their land; to make the rent, excessive cropping was resorted to. Confidence between landlords and tenants was destroyed, and recent experience created a profound distrust of leases. In many cases the heavier soils were abandoned; in nearly all the land was allowed to fall into miserable condition. On the light soil of the Eastern Counties, farmers had suffered comparatively little. The higher the farming, the less had been the loss. The spread of drill husbandry, better and more varied

rotations of crops, the abundance of natural manure provided by the practice of stall-feeding, and improvement both in sheep and capital, enabled energetic tenants to make farming pay, even in the midst of falling prices.

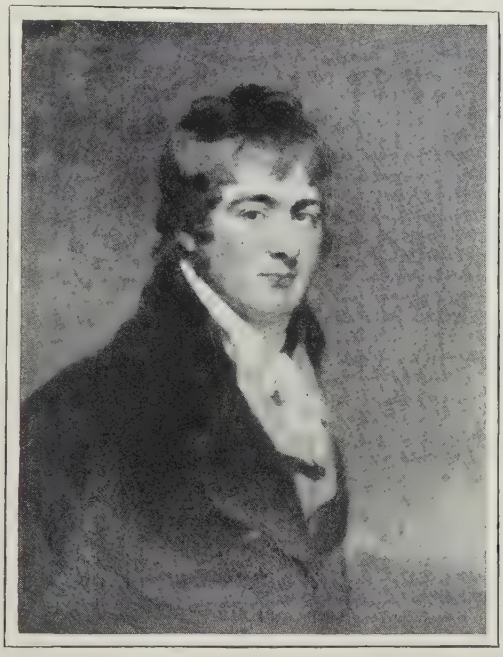
Revival after 1836.

After 1836, signs of reviving prosperity became manifest. The rapid growth of manufacture gave a fresh impulse to agriculture. The new system of the Poor Law lightened the crushing burden of rates, which fell from six and a quarter millions in 1834, to four millions in 1837. The Tithe Commutation Act of 1836 encouraged landlords and tenants to invest their money in land, without fear that tithe-owners would intercept the increased profits derived from an outlay to which they had not themselves contributed. Wool, mutton, and beef rose in value; barley and oats sold briskly at enhanced prices. Farmers, who were fortunate with their wheat in 1838 and 1839, profited by the defective harvests, which in those years were generally prevalent. Farming entered on a new era of prosperity which, with certain fluctuations, continued down to 1876.

In 1812 the Royal Society had adopted the motto of "Science with Practice," and the general characteristic of agriculture during this period is the adoption of this motto. Hitherto bucolic life had been the pastime of the town, the inspiration of poets, the relaxation of statesmen, the pursuit of individual landowners. But, as a rule, farmers had neither asked nor allowed scientific aid. From 1836 onwards, on a larger and ever-increasing scale, capital and science, combined with practical experience, applied their united forces to agricultural progress. In 1838, the foundation of the Royal Agricultural Society—replacing the old Board of Agriculture, which expired in 1819—marks at once the revival of prosperity, the general recognition by landlords of their territorial duties, and the alliance of the man of science with the farmer. It proclaims the acceptance of new conditions; it indicates the direction in which agriculture was for the future to advance. Farming ceased to depend for its advance on the chance-directed discoveries of unlettered rustics; henceforward it enlisted in its service the capital of the wealthy and the experiments of the learned.

Science was applied to farming in ways so various as to

defy enumeration. Architects, mechanists, geologists, chemists, physiologists, statisticians gave their aid to the farmer, trebled his resources, lessened his risk, and placed at his command the means of economising the cost and increasing the amount of production. Vast capital was expended on farm buildings. Instead of rickety barns and tumble-down sheds, well arranged



LORD ALTHORP, FIRST EARL SPENCER, BY SIR MARTIN ARCHER SHEE, P.R.A.
(*By permission of the Right Hon. Earl Spencer.*)

and commodious farm buildings were erected. New means of transport and communication brought distant markets to the farmer's door. Railroads, steam navigation, and joint stock banks assisted the revival of his prosperity. The new Poor Law and the Commutation of Tithe Act have been already mentioned. But Acts for the enfranchisement of copyholds, for drainage and for enclosures, also helped the farmer in his distress. Steam and machinery lessened his toil and his expenses. Veterinary science made gigantic strides, and it was

no longer necessary to sacrifice valuable animals to the ignorance of quacks. The schoolmaster was abroad, and in 1842 the Royal Agricultural College was founded. Agricultural implements were improved, and their use more widely diffused. New rotations and new varieties of field crops were introduced. Live-stock was better bred, better fed, and better housed. High farming, good roads, good homesteads, good crops, good stock, good farmers became the rule and not the exception.

Intensive Cultivation.

Such are the general features of the period of prosperity which first showed signs of commencement in 1836. Its characteristic is the adoption of the rule of "Science with Practice." Cut off from the old resource of increasing the yield of the soil by enlarging the cultivated area, agriculture was driven to effect improvements in its methods. The age of farming by extension was ended; that of farming by intension had begun. Within the period 1832–45, the most striking improvements are those in the science of drainage and in the science of manures. To these two important points some attention must necessarily be given.

Drainage.

It has been said that the stress of the storm of 1815–36 fell upon the clay farmer. Without drainage he could not hope to recover his prosperity, or to compete, on anything like equal terms, with light, naturally-drained soils. With the need came the man. In draining the land of surface water, the ordinary practice was to throw the land into ridges, which were often several feet in height. The effect of such a system was not only to leave the furrows standing pools of water, dammed up by the raised headlands, but also to wash the soil bare from the ridges into the furrows, leaving the high ground too poor, and the low too wet, to grow crops. Sometimes the ridges were of great height. In Gloucestershire, for example, at the beginning of the century, Marshall notes that, as he stood in a furrow, a man, crossing a ploughed field towards him, was lost to sight in every furrow into which he descended. In Leicestershire, the Eastern Counties, and especially Essex, the art of thorough drainage was better understood. To carry off the surface water, shallow trenches were cut, which were filled in with straw, ling, sticks, stone, or turf, and then covered over. But though the value of the practice was recognised in these districts, it was scarcely appreciated in other counties. The

true pioneer of the modern science of drainage was Smith of Deanston. His object was to discover some means of carrying off the surface water which stagnated on clay soils, rendering them cold and tenacious in wet seasons, hard and unworkable in dry weather. To this object he devoted a series of experiments on a small farm at Deanston, and, from 1834 onwards, made known to agriculturists his methods of drainage, which restored the prosperity of clay farms and enabled them once more to compete in productiveness with light, sandy, naturally drained soils. Among his most zealous and enlightened patrons was Sir Robert Peel.

JAMES SMITH OF DEANSTON, BY R. ANSDELL, R.A.
(*Royal Agricultural Society.*)

His principles are now so universally accepted that they hardly need discussion. The soil cannot retain by attraction more than a certain amount of water. Of the remainder it must rid itself either by evaporation or by superficial discharge. If the land rids itself of surface water by evaporation, the temperature of the soil is chilled. A wet cloth wrapped round a bottle in hot weather acts as a refrigerator. The same effect is produced on the soil by evaporation. If the rain runs off the surface of the soil without penetrating, the soil is impoverished by the loss of one of its most fertilising agencies, for rain not only carries the heat downwards by penetrating through the surface, but also enriches it with its own nutritive elements. Nor is this all. A superficial discharge of rain-water carries off the natural fertility of the soil, as well as the artificial products used for its enrichment. Thus to the clay-farmer rain

was an enemy rather than a friend. His undrained land was either saturated with water in a wet season, or baked to a brick by the sun, or bound in a coat of iron by a frost.

Smith's object was to draw the water through the soil by means of deep drainage, to enable the rain to penetrate, to admit the air, and thus to change the texture of the soil by communicating to it that divisibility and mellowness which farmers call friability. Drainage, thus practised, gave the farmer more days on which he might work his land, increased the efficacy of his tillage, and doubled the value of his manure. It gave him an earlier seed-time and secured him an earlier harvest; it raised the productiveness of the soil and lessened the expense of working it. Within a few years after Smith of Deanston made known his system, other improvements demonstrated the value and facilitated the application of his discovery. Josiah Parkes (1843) brought his practical and scientific knowledge to bear upon the subject. The cylindrical pipes of Reed (1843) and Scragg's machine for their construction perfected the means of drainage. In 1846 Parliament provided loan facilities, which enabled prudent landlords to drain their estates without imposing upon them an impossible burden of interest upon borrowed capital.

Manuring. The boon of improved drainage was especially valuable to tenants of clay farms. New manures assisted all farmers alike, whatever the nature of the soil. When agriculture was in its infancy little attention was paid to manure, though its value was recognised in the retention of manorial rights of folding. Many of the best of early agricultural writers hardly mention the subject at all. Markham, Plat, Lord Bacon, and Hartlib appreciated the value of manure, but they knew only of natural substances. As a rule, a little half-rotted straw was the only fertilising agency employed. "Nothing like muck" was a proverbial saying when only muck was available. With this exception, seaweed on the sea-coasts, the sweeping of streets in the neighbourhood of towns, salt, urine, marl, bones, bone-dust, ashes, and soot, were almost the only resources of the agriculturist. Now, however, science discovered new means of enriching the soil. The attention of men of science was directed to the different properties of the soil, and to the restoration of those qualities which the various crops exhausted. Sprengel

and Liebig led the way in the study of agricultural chemistry. From 1835 onwards the use of nitrate of soda and guano gradually spread. The manufacture of British guano supplied a cheaper and hardly less valuable substance than its Peruvian rival. In 1840 Liebig recommended, and in 1843 Sir John Lawes obtained, superphosphates of lime by dissolving lime-dust in sulphuric acid. Geology contributed its quota. In 1843 Professor Buckland and Professor Henslow proved that coprolites, similarly dissolved, would produce the necessary superphosphates, and provided a new industry and new sources of wealth for such a county as Cambridgeshire. Eight years later, Odams (1851) demonstrated the value of the blood and refuse of London slaughterhouses in fertilising the soil. The use of phosphatic and ammoniacal manures revolutionised the old rules of cropping. So long as prices were high enough to support the expense of the new fertilisers, land was able to bear without exhaustion the strain of successive corn-crops. Nor did the value of manures stop here. The new agencies stimulated not only produce, but drainage; manures and thorough drainage acted and reacted upon one another; the first encouraged the second, and the second demonstrated the value of the first. Some idea of the increased use of manure and of the stimulus which it gave to farming may be gathered from the facts that in 1814 the declared value of bones imported into this country was only £500, in 1837 it was £255,000; in 1815 the quantity of rape cake and linseed cake was only 16,000 cwts., in 1837 it rose to 800,000 tons; in 1841 the guano imported was only 1,700 tons, in 1847 it was 220,000 tons.

Increased Yield.

Though prices fell, farmers found a substitute in the increased produce which resulted from manure, subsoil ploughing, drainage, and other improvements effected by the union of science with practice. Before Mr. Pusey's Committee on Tenant Right (1848), a Lincolnshire tenant was asked what was the increase in produce on his land, which resulted from improved farming. "The increase," he replied, "has been from almost nothing to 32 and 36 bushels an acre. It was formerly little more than a rabbit warren, only thirty-five years ago." Other instances, equally striking, might be cited to prove the enormous advance which farming made during the first half of the present century.

J. E. SYMES. The Social Economy.

THE Factory Act of 1833 was the first important step taken towards the reorganisation of industry by legislation after the Industrial Revolution had overthrown the old organisation. Hitherto the working classes had gained little by the series of inventions and discoveries which characterised the half-century before the Reform Bill. The wealth of England had been doubled; but the wages for most kinds of labour had hardly, if at all, increased; and the conditions under which the work was done had in many respects deteriorated. The rapid flow of labour to the great centres of industry had aggravated the badness of the dwellings of the poor, and had led to much overcrowding. The increased employment of children was largely due to the fact that mechanical inventions had opened out new means of utilising child labour. Employers soon found that children could do much of the factory work; and children were plentiful at a penny a day. They were often swept into factories when they could hardly walk. The Poor Law authorities of London began carting off waggon loads of pauper children to Lancashire. As the population of the manufacturing centres of the North multiplied, the demand for little London paupers fell off. The workmen were driven by poverty or greed to send their own children to work in the factories, and thus, in the long run, to beat down their own wages, by the competition of their own children. Many of them hated the necessity, and some saw that they were really injuring their own class. But what could a man do but imitate his neighbours? His own wages were, perhaps, a shilling a day. His half-dozen children could add fifty per cent. to this; and it was almost impossible to feed them otherwise. Children of eight, seven, or even six were frequently employed in factories. It needed more than average enlightenment and self-sacrifice to keep them at home or at school till they were nine; and the poor little mites often had to work twelve or thirteen hours a day. The condition of many of the factories was disgusting. The atmosphere was often abominable; the moral atmosphere sometimes worse. Children of both sexes were growing up in a sort of slavery, broken in health and brutalised in mind.

Factory Legislation.

Earlier Acts of Parliament had slightly, but only slightly, modified this terrible system. In 1816 the labour of children in *cotton* mills had been restricted to twelve hours a day. A

few years later a further reduction of three hours on Saturdays had been enacted. But these measures only applied to a single industry; and the work of unfortunate children, who were employed in other kinds of factories, was not even confined to sixty-nine hours a week.

In the Unreformed Parliament Michael Sadler, an extreme Tory, proposed to limit the hours of child labour to ten hours a day. The House referred the question to a Select Committee, whose investigations disclosed a state of things which few educated people had previously realised. To say that children of nine worked twelve hours a day conveyed to the leisured classes no very definite impression. But now doctors of eminence had shown to the Committee that it meant a physical and moral degradation of the mass of the English people; that the next generation was growing up with distorted limbs and weakened lungs—without hope, or joy, or innocence. In the general election which followed the Reform Bill, Sadler was defeated for the newly enfranchised borough of Leeds by young Macaulay, himself one day to be an eloquent defender of Factory Legislation. But Sadler had made inevitable what was to be one of the most important of the Bills of the Reformed Parliament.

Sadler.

MICHAEL SADLER, M.P.
("*Fraser's Magazine*," 1835.)

The place of Sadler was taken in the new Parliament by Lord Ashley, afterwards known as Lord Shaftesbury. He proposed that the work of children under nine in factories should be altogether abolished, and that those under eighteen should not be allowed to work more than ten hours daily. Government inspectors were to be appointed to enforce these regulations, and to see that the children had some education. The manu-

Lord Ashley.

facturers declared that if Ashley's measure were carried, English trade would be ruined; that they could only just hold their own, as things were, against foreign competition; and that under the proposed restrictions, they would certainly be beaten by countries where the work of children was freely allowed. The manufacturers were very powerful in the Reformed Parliament, and many independent members were impressed by the gloomy prophesies of those whom they regarded as experts. The Whigs, who formed the majority of the House, were much under the influence of the dominant political economists, who were preaching the doctrine of leaving trade to the operation of free competition. So the matter was again referred, this time to a Royal Commission. This Commission practically confirmed the report of the Select Committee. Nevertheless, the manufacturers in the House succeeded in reducing the age for the ten hours' limit from eighteen to thirteen. Thereupon Ashley threw up the Bill in disgust.

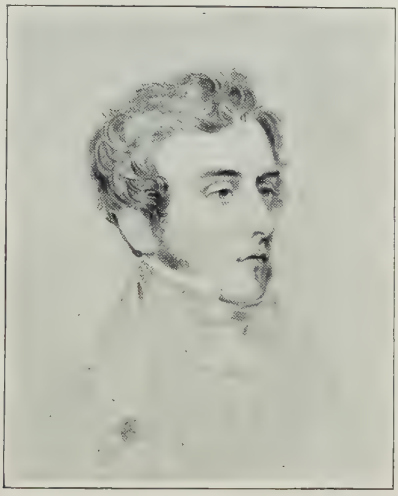
The Act of 1833.

The Government felt, however, that they could not let the matter drop, in the face of the two reports. They introduced a Bill of their own, more moderate in some respects than Ashley's, but in others going even further than he had proposed. Children under thirteen were now to be limited to eight hours' work daily. Young persons between thirteen and eighteen were not to work more than sixty-nine hours weekly. The Act was passed, and British trade was not ruined. In fact, the following years brought a great increase in our exports, and a slight rise in manufacturing wages. It would be unreasonable to attribute these results to the Factory Act. The fruits of that measure cannot have ripened so rapidly. But at least the prosperity of 1834 shows that the fears of 1833, even for the immediate future, were unfounded; and in the long run the country undoubtedly gained, even in purely material wealth, by the improvement in the health and strength of the labouring classes; so that the measure, which brought comparative ease and joy into many young lives, had not even to be paid for by diminished production.

The Poor Law.

The next important reform in our economic history was the Poor Law of 1834, which probably did as much for the rural poor as the Factory Act did for the factory workers. As lately as 1796 England had adopted a system which, in less than

forty years, reduced almost all agricultural labourers to a position of pauperism. The system was well meant. It endeavoured to mitigate certain evils growing out of the Industrial Revolution. Agricultural labour is naturally most in demand during the summer. But certain improvements in machinery deprived agriculturists of what had been one of their chief winter employments, viz. thrashing corn with flails. It was, therefore, thought desirable that the parish should supplement winter earnings,



LORD ASHLEY, SEVENTH EARL OF SHAFTESBURY.
(*After James Slater.*)

and the same principle was applicable to the summer, when wages were exceptionally low. Again, it seemed clear that a man with a large family needed more help than a bachelor, or a man with few children. Accordingly the parish help was made to vary with the number of mouths to be filled. It is evident that the motives for thrift, industry, and enterprise were seriously checked by a system under which the parish was to guarantee what is now called "a living wage." Moreover, if an allowance was to be made for every child, early and improvident procreation was encouraged. Again, if the ratepayers were to be subjected to such a burden, they would have less to spend in wages, and persons who would otherwise find remunerative

employment would be driven to apply for doles to the parish. All this actually took place under the "old Poor Law." Thrift and industry and enterprise were discouraged. The population was increased with a general disregard of parental responsibility. Poor rates rose at an even greater pace, and an ever-growing proportion of the agricultural labourers became paupers. Whether these results might have been prevented by wise and honest administration of the old Poor Law is questionable. But the actual administration was entrusted to people who were neither wise nor honest. Employers voted doles to save in wages. In other words, they got their work done partly at the expense of the parish. Shopkeepers voted relief in kind, which would bring custom to themselves or their friends. Staunch churchmen would proportion relief to professions of piety or marks of respect to the parson or squire. It was natural that rates should rise rapidly, and indeed it was calculated that in eighty years they multiplied by nine.

Commission of 1832.

A Commission was appointed in 1832, whose report revealed facts as deplorable as those which the Factory Commission reported. They recommended that out-door relief to able-bodied men (except in the form of medical aid) should be abolished, and that a central Board should sit in London with power to exercise a general control over the local authorities. There was a great outcry from charitable and well-meaning persons, who were shocked at the idea of depriving the poor of their accustomed doles. Others denounced the proposed Board as destructive of local liberties and independence.

Poor Law Reform, 1834.

But the case of the Commissioners was so strong that the Government introduced a Bill founded on their recommendations, and carried it through Parliament by overwhelming majorities. The second reading in the Commons was voted by 319 against 20, and such amendments as were carried in either House left the main principles unimpaired. Parishes were now grouped together in Unions, with Boards of Guardians to administer relief for the whole Union. Such bodies were far less likely than the old parish overseers to be animated by selfish local or personal motives, but they were also placed under the control of a Government Department. Out-door relief for the able-bodied was not absolutely prohibited. It could be given in the case of persons over sixty years of age, or in

whose family there was sickness. But even in such cases the Guardians were not bound to give out-door relief, and later legislation has further discouraged their doing so. The general rule was to be that an able-bodied man not able to support himself and his family should only be offered the workhouse. In many cases this rule worked harshly, and it provoked much indignation. But on the whole it has been justified by its results. The poor rates fell from seven millions in 1832 to four millions in 1837, and, what was more important, the proportion of paupers in the population steadily diminished. In districts where poor relief had been applied for as a matter of course in winter and in hard times, a more independent spirit grew up, and pauperism came to be looked on as a reproach.

Trade Unions, 1832-1843.

In the period dealt with in this chapter Trade Unionism made comparatively little progress. No doubt in the earlier part of it a large number of new unions were formed, especially the Builders' Union, which embraced all branches of the building trade (joiners, masons, plumbers, painters, plasterers, etc.), from all parts of England. But the unionists had not yet learnt the importance of making their organisations purely business trade organisations. They got mixed up with political and philanthropic propaganda, with Owenism, Chartism, and the general promotion of the brotherhood of man. The attempt to federate disconnected trades was greatly stimulated by this tendency. In 1834 Owen started the "Grand National Consolidated Trades Union," which included, besides the ordinary unions, a variety of lodges (female and other). The constituent societies were each to have their own funds, but levies were to be made by the whole consolidated union in the case of strikes. Schemes for leasing land and starting co-operative workshops were part of the programme. Within a few weeks 500,000 members had joined, and a number of weak unions had been called into existence. The upper and middle classes were seriously alarmed, and in March, 1834, six Dorchester labourers were sentenced to seven years' transportation for having illegally administered an oath. The Grand National Consolidated rushed to the rescue, and organised a monster demonstration in London, which was attended by 30,000 people. But it achieved little, and the unions wisely dropped the habit of administering oaths.

The provision for strike levies proved the ruin of the Grand National. The members were not disposed to pay for strikes of whose merits they might know nothing. The depression of trade in the years 1836–40 helped to weaken the unions, and the energies of the more active leaders were drawn off towards Chartism. But a revival of trade changed the situation. From 1841 to 1843 Chartism dwindled, and Trade Unionism grew stronger. In 1841 the Miners' Association of Great Britain and Ireland was formed at Wakefield. Its membership rose to

TRADE UNION CARD OF THE CORDWAINERS.
(*The London School of Economics and Political Science.*)

100,000, and at one time it employed fifty-three missionaries to disseminate its principles. Other societies were formed on a sound basis, and the agitation against the legal restrictions which still hampered Trades Unionism was vigorously pushed. The sick and benefit side of the organisations was developed, and counsels of moderation began to prevail.

Robert Owen.

The influence of Owen contributed to this, and indeed there were hardly any of the labour movements of our period in which this remarkable man did not make himself felt. From about 1790 he had been engaged in the cotton industry. The raw Welsh youth gradually rose to be a manager, and ultimately inherited his employer's business. The men under him were soon distinguished in character and efficiency, and Owen attributes much of his success to the fact that he

attended specially to the "living" and not merely to the "dead" machines. He refused to employ pauper children; he started schools where the children of those under him should be educated (and that by new methods, and especially by kindness) till they were twelve years old, before which they might not be taken into the mills. He provided stores

ROBERT OWEN.
(*After W. H Brooke.*)

where his men could buy good things at a low price, and generally acted in the spirit of a paternal despot. The New Lanark Institutions became so famous that from 1814 to 1824 they were visited by 2,000 persons annually. The future Czar, Nicholas, was one of the visitors, and talked of founding a New Lanark in Russia. The exiled Napoleon is said to have been converted to Owen's views, and the Royal Duke of Kent was at the head of a committee for promoting them. Owen made a considerable fortune by his rare combination of ability and far-sighted benevolence. Gradually, however, his views took a more democratic turn.

In 1825 he bought up a village—"Harmony"—in America for £30,000, and tried to run it on semi-Communistic principles. If Owen had ruled it, there is no saying what the result would have been; but he left it to rule itself, and the scheme was a complete failure. The same thing happened with other similar schemes tried by his disciples. In 1829 he retired from business, and devoted himself to Socialistic propaganda. He started various papers, and delivered innumerable lectures. He opened in 1832 the Equitable Labour Exchange, a curious attempt to enforce, by means of a currency of "labour-notes," the theory that only the products of equal labour might fairly be exchanged for one another. Co-operative schemes absorbed much of his attention, but here, as in Trade Unionism, his Socialistic and philanthropic convictions tended to divert the movement from the comparative limitation of objects and methods, which proved to be the path by which it was ultimately successful. Meanwhile he had undoubtedly done much to stimulate thought and effort. His very failures were more useful than most people's successes, and especially he succeeded in fixing in the minds of large numbers of thoughtful people that men and women are the most important elements in national wealth, and that co-operation is more important than competition in producing even purely material prosperity. The partial realisation of some of his co-operative ideas must be postponed to our next chapter.

TRADE UNION CARD OF THE CURRIERS.
(*The London School of Economics and Political Science.*)

Owen always opposed violence, and had not much belief in State interference. He relied chiefly on voluntary combination and individual initiative. But the Radicals mostly thought that the condition of the poor could be improved by legislative changes, and many of them were even willing to appeal to force. From 1838 the so-called People's Charter became the authorised programme of the party. It was the old Radical creed: Manhood Suffrage, the Ballot, Annual Parliaments, Paid Members, Equal Electoral Districts, and the Abolition of all Property Qualifications. Several of these six points have since been conceded, and it is possible that they might all have been granted in 1838 without serious injury. But the danger of the situation lay in the wide-spread misery and discontent which was at the root of the movement. The abolition of the old Poor Law (with its lavish out-door relief) had roused much bitter feeling. The Reform Act of 1832 had admitted the middle classes to power, and they were legislating in their own interests. It was hoped that if the lower classes were allowed to share power, they would be able to use it to improve their condition. The danger was lest they should make legislation a means of plundering the rich. What measures they wished to pass when they had got the power was by no means clear. Many of the Chartists certainly wished to relax the provisions of the new Poor Law. Others advocated more pronounced Socialistic proposals. The leader of the Chartists, so far as they had a leader, was Feargus O'Connor, a typical demagogue of great physical prowess and considerable oratorical gifts. He afterwards went out of his mind, and he never displayed much intelligence. But among the less prominent Chartists were many men of real ability, mostly enthusiastic young workmen, self taught, but often better educated than the so-called educated class. Newspapers, meetings, violent speeches, and arrests followed. At length, in November, 1839, there was what might almost be called a rebellion at Newport in Monmouthshire (p. 159). The rioters were suppressed by the military. Smaller riots took place elsewhere. But it was soon seen that the number of Chartists in favour of physical force, and willing to risk their lives in armed rebellion, was insignificant. The panic passed away, but not the discontent. It smouldered on, varying in intensity with the

Chartism.

popular distress and other contingencies. Socialism, Secularism, Teetotalism, Trade Unionism, Co-operation, Vegetarianism, and other movements got mixed up with Chartism in some degree. But its main factor continued to be a bitter sense of injustice and misery, with a conviction that the rich were in some way responsible. The upper and middle classes repaid hatred with hatred, and generally regarded the Chartists as brutal and desperate men, coveting the wealth of others, without belief in God, and without reverence for their social superiors or the rights of property.

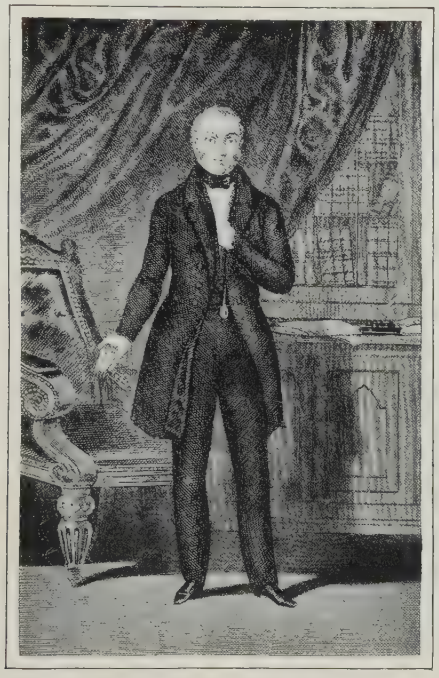
"Young England."

There were, of course, many of the well-to-do who sympathised with the sufferings of the poor; and in 1843 what was known as the "Young England" party attracted considerable attention. Disraeli had begun as a Radical, but with some leanings towards Toryism. The patriarchal system, with benevolent landlords and loyal peasants bound together by mutual obligations, was the fascinating ideal which he put forward; and he persuaded various well-meaning young nobles and squires to join him in an effort towards realising it. The movement came to little, but it deserves mention as the most prominent of the attempts to remove Chartist grievances without democratising our institutions.

The Corn Law Agitation.

Meanwhile a powerful agitation was to some extent diverting attention from Chartism. This was the movement against the Corn Laws, which was to a great extent a middle-class agitation, in which rich manufacturers and merchants played an important part. The Chartists were divided on the subject. Some of them believed that a reduction of the tax on bread would be followed by an equivalent fall in wages; and even those who were convinced Free Traders generally looked with some coldness and suspicion at what they considered essentially a middle-class agitation, and one which they feared would distract popular interest from the People's Charter. Nevertheless, the movement spread rapidly. Thousands of pamphlets were circulated by the Anti-Corn-Law League, which had been formed in September, 1838. Gigantic bazaars were held to recruit its funds. One of these raised £20,000. A Free Trade Hall rose in Manchester, at the place which had been the scene of the Peterloo massacre. The Penny Post and the spread of railways enabled the agitation to grow to

dimensions for which there was no precedent. The big towns in the North of England, now enfranchised by the Reform Bill, were warmly on its side, and it secured two remarkable leaders. Richard Cobden had risen from a humble position to a moderate competence in a Manchester business, and had acquired some fame as a writer of political pamphlets when he threw his chief



FEARGUS O'CONNOR.
("*The Labourer*," *Vol. II.*)

energies into this movement, for which his qualities were specially suited. He was not a great orator, still less a special pleader, but he had a great skill in marshalling the facts which had convinced himself, and in appealing to common sense. John Bright, on the other hand, was pre-eminent as an orator, whose passionate convictions warmed up a simple style and an appearance of self-restraint. He was a master of pathos, of humour, and of scorn, well fitted to rouse the feelings of those whose understandings had been convinced by Cobden, and of

many who could not appreciate the logical force of the Free Trade arguments. By 1842 the league had become a great power in the country. But their prospects in Parliament did not seem very brilliant. The Tories with their sliding scale, and the Whigs with their fixed duty, were almost equally opposed to the policy of complete abolition of Corn Laws. A Free Trade motion, in 1842, only secured ninety votes in the House of Commons against 393, while in the House of Lords it was rejected by 109 to five. Nevertheless, the Budget of 1842 showed how far Peel was prepared to go in the direction of Free Trade. A new and much modified sliding scale was adopted, under which (to give a single instance) the duty on wheat would be reduced from 36s. 8d. to 20s. when the price was 50s. This was followed by the modification or abolition of the customs duties on 750 kinds of articles. The loss to the revenue was to be made up by an income tax. In fact, Peel was already convinced that Free Trade was the sound principle. But he still persuaded himself that an exception should be made in the case of corn.

Peel's Tariff Reform, 1842.

The Irish famine of 1845 completed the conversion of the leaders on both sides to the abolition of the Corn Laws. It was absolutely necessary to open the ports freely to all kinds of food, and if they were once opened it was not likely that the nation would tolerate a return to dear bread. The Whig leader, Russell, wrote that Protection was "the blight of commerce, the bane of agriculture, the source of bitter division among classes, the cause of penury, fever and crime among the people." The Conservative Premier proceeded to announce his conversion (January, 1846), and managed to carry with him all but one of his Cabinet. Mr. Disraeli sprang into sudden prominence as the leader of a Conservative revolt, but the abolition of the Corn Laws was sustained by 327 to 229 in the Commons, and by 211 to 164 in the Lords. This was followed by an increase of national prosperity, particulars of which will be given in the next chapter.

The Corn Laws Repealed, 1846.

We must now turn back to briefly describe the financial crisis which marked the years 1836–37. The excellent harvests of 1833, 1834, and 1835 lowered the price of wheat, and thereby caused much agricultural distress; but other classes of the community gained by the fall, and both manufactures and

Financial Crisis, 1836 37.

commerce were considerably stimulated. As usual there followed an unwise amount of speculation, especially—this time—in railways and foreign loans. There was also a great extension of the joint stock banking system, which further economised capital and lent facilities for undue, as well as for legitimate, credit. The accumulating capital was seeking everywhere for remunerative openings. Several hundred companies were formed with a nominal capital of two hundred millions of pounds. Many of them were simply got up by speculators to entrap unwary investors. The climax was reached in March, 1836, when a contraction of credit and a drain of gold from the bank set in. The rate of discount was raised to 4½ per cent. in July, and to 5 in September. But still the drain continued. Bubble companies were bursting on every side, and the Bank of England decided no longer to discount bills endorsed by the joint stock banks of issue. A catastrophe followed. First, the Irish "Agricultural and Commercial" stopped payment (November 14th). There was a run on other Irish banks. Then many of the English banks found themselves in difficulties, and began pressing the Bank of England for loans. It advanced £1,370,000 to the "Northern and Central," and £6,000,000 to various American houses in London and Liverpool. It thus averted a repetition, perhaps on a larger scale, of the disasters of 1825 (p. 122 *seq.*). There were serious failures and much financial disturbance in 1836-37, and the bad harvests of 1838 and 1839 aggravated the depression. This was followed by another crisis. Nevertheless, the panics of these years fell far short in intensity of those of 1826 and 1847. They were mainly connected with the trade to America, India, and China, and only slightly interrupted the general industrial progress of the nation.

Bank Charter Act, 1844.

The crises of 1826, 1837, and 1839 were certainly partly due to the excessive credit given in the months immediately preceding the crisis. Peel was convinced that the danger of a recurrence of similar panics might be diminished by restricting one of the most obvious forms in which credit is given, viz. the issuing of bank-notes, which are in effect promises to pay. He, therefore, introduced his celebrated Bank Charter Act of 1844. From his speech it seems clear that if he could have made a fresh start, without regard to vested interests, he would have made the issuing of bank-notes

an absolute monopoly, and would have kept it in the hands of the Government. As things were, however, he proposed (1) to divide the work of the Bank of England into two distinct departments, one of which was only to issue notes, while the second was to discharge the other banking functions; (2) to limit the number of notes which the Bank of England might circulate to the amount of bullion in the Bank, together with £14,000,000, together with two-thirds of the amount that any bank which ceased to exist might previously issue; (3) to limit the amount that provincial banks might issue to what had been their ordinary note circulation, while the Scotch and Irish banks were to be in the same position, except that they might further issue notes up to the amount of bullion in their reserve; (4) to prohibit all London banks, except the Bank of England and all other banks that might be chartered after the Act, from issuing any bank-notes whatever These were the most important provisions of the Act, of which it must suffice to say here that if it limited the giving of credit in times of undue speculation, it would also limit it at times when the public interest demanded that more credit should be given. But, of course, it was open to the Legislature to suspend the Act at such times, and we shall see that it has more than once availed itself of this remedy. On the whole, the measure may be described as a somewhat clumsy and characteristically English compromise, with perhaps an excessive regard for vested interests, and which certainly provided no adequate protection against crises and panics, but which, nevertheless, has had some practical utility, and avoided the dangers which a more logical treatment of the question might have involved.

Mines Act, 1842.

The principle of the Factory Act of 1833 was gradually extended. The more important of these extensions, during the period dealt with in this chapter, was the Mines and Collieries Act of 1842. The report of a Commission showed that children of six years were working in dark and unwholesome excavations, while women were employed on tasks for which their strength was inadequate, and by which their modesty might be undermined. It was shown that the population of the mining districts were deformed and diseased through the nature of some of their work. The chief provisions of the

THE FINANCIAL RECOVERY AFTER 1836.

(From a contemporary satirical print.)

Act will be found in our last section on mining (p. 752). It was introduced by Lord Ashley, and met with little opposition.

Summary. The period 1832 to 1846 was one of great legislative reform, but of slow material progress. The population advanced rapidly, but wages fluctuated, and only showed a slight upward tendency. On the other hand, pauperism was much diminished by the changed Poor-law, and commerce grew, in spite of the disturbances between 1836 and 1839. Capital also accumulated fast, and, though much of it was sunk in railways, etc., this was soon to bring in returns, of which in the long run the wage-earning classes were to secure a considerable share, especially as they got better organised in unions and better protected by factory and mining legislation. Finally, Free Trade was established, and the price of the necessaries of life began rapidly to fall.

ARTHUR GRIFFITHS. Prison Discipline and Prison Reform.

THE first great movement in philanthropy and prison reform began and died with John Howard (Vol. V., p. 656 *seqq.*). Prisons in England generally relapsed afterwards; efforts at improvement had been spasmodic, and were short-lived. Here and there, notably in the Eastern Counties, more intelligent and humane principles were observed; some attention was given to classification, cleanliness, and prison employments. But elsewhere the previous chaos supervened; overcrowding was so terrible that in some prisons the wretched inmates slept edgeways for want of room to lie flat; buildings were so unhealthy that infection stalked rampant, so insecure that shackles and fetters were made to supplement the want of walls. There was no separation between the sexes, and moral contamination flourished unchecked; chaplains were few and often without much zeal. The worst abuses prevailed everywhere, and this in spite of legislative enactment; for, to the credit of Parliament, many Gaol Acts had been passed; all aimed at securing reform, but the law generally remained a dead letter.

It was not till after the Peace of 1815 that the fresh remedies were applied. The chief credit is due to a small band of earnest workers, many of them Quakers, who formed themselves into a Society for the Improvement of Prison Discipline. One of its most active members was Mr. T. F. Buxton,

and among his coadjutors were such men as William Wilberforce, Macintosh, Scarlett, the Gurneys and Frys. A system of visitation was adopted to investigate and expose the most crying evils. It was now enunciated for the first time that the criminal in custody had certain rights: the right to be fairly treated, to be spared disease and the deterioration that must follow free intercourse with vile associates. Now, too, it was suggested that prisoners should be separated one from another, and the Society succeeded in forcing this view upon the Legislature. Through their untiring efforts new Gaol Acts, those of 1823–4, were passed, and in these many sound principles were laid down. Cleanliness and sanitary precautions were insisted upon; it was ruled that every individual should have a hammock or cot to himself; regular labour was recommended for all; chaplains, schoolmasters, matrons for female prisoners were appointed.

Gaol Acts, 1823-24.

Yet progress was strangely slow. The new laws were evaded or ignored. The cause of reform was impeded by the misplaced ridicule of retrograde people who denied the existence of such flagrant evils, and sneered at the ultra-philanthropists. It was asked whether Turkey carpets were also to be provided for the prisoners' cells. Even Sydney Smith sharpened his wit upon humanitarianism run riot, and declared that if the Prison Society had its way in pampering criminals, prisons would cease to be a salutary terror to evil-doers. The Society's answer was to hold on in its course with undiminished energy and singleness of purpose. Its members never faltered in their self-imposed task. It was herculean; the multiplicity of prisons, their diffusion over a wide area, each under an independent and often most apathetic jurisdiction, greatly hindered examination or control. The worst prisons were those of the corporate bodies, and of these Newgate was pre-eminent as the narrowest, foulest, most debasing and defective in the length and breadth of the kingdom.

The next great move was made in 1835, following the severe strictures of a Committee of the House of Lords, who denounced the hydra-headed evils still existing in prisons. The recommendations in this report all made for improvement; but its most interesting feature was its unhesitating acceptance of the principle of entire individual separation; in other words, of that rule of "separate confinement" which has been adopted, at least

The Cellular System.

in theory, throughout the civilised world. As to recommendations and even enactments, none were likely to be observed unless steps were taken to insist upon it. For this purpose two inspectors of prisons were appointed, officials and experts whose first duty was to watch over the progress of reform. These gentlemen, with praiseworthy and fearless zeal, now commenced a crusade which won them some obloquy, but was productive of immense good. Their first report, dealing only with Newgate, which they condemned in the most trenchant and unsparing terms, attracted universal attention. Public opinion was at last aroused. It was deemed a disgrace that such horrors should survive "the denunciations of authority, in contempt of religion and humanity, and in defiance of the law." The general interest was kept alive as year after year the inspectors continued their exposures. Parliament once more interposed, re-affirming the principle of separation, and urging the local authorities to build new gaols with a sufficiency of separate cells. It went further, and in order to stimulate effort and provide an example for general imitation, proceeded to erect Pentonville Prison, then and still known as the "model." It is an enduring tribute to the far-seeing judgment of its projectors; for this prison as it stands to this day, with its tiers of cells in buildings radiating like the spokes of a wheel from a common centre, is still the best type of prison construction, and has been generally adopted all over the world.

The Government lead was quickly followed, and within a few years of the completion of Pentonville, fifty-four new prisons were built in various parts of the country. The system of cellular confinement was adopted in all, and now when prison discipline had become the question of the hour, there was much controversy, many conflicting opinions, as to the best kind of prison treatment. Some were in favour of unbroken silence and continued isolation; others supported labour in association, with separation at all other times. To-day, after much debate and experiment, the question has been settled by using a modification of both systems. Separation is enforced for short terms; in penal servitude sentences which range from three years upwards it is limited to the first nine months' imprisonment, the remainder being passed in associated labour on public works.

We have dealt so far with the amelioration introduced into gaols, the receptacles of the unconvicted, the debtors, and the least heinous offenders. But the prison pure and simple was the ante-chamber only to graver punishment and a more gruesome penalty. While reformers were busy with prisons these other methods called also for change. Until 1838 penal

Milder Penalties.

THE LOCK-UP HOUSE, BY GEORGE CRUIKSHANK
(From "Sketches by Boz," by Charles Dickens, Vol. II.)

exile, or transportation beyond the seas, was still the rule for all great criminals, and many small ones, who escaped the gallows. But the year that saw the condemnation of the one saw also a marked diminution in capital punishments. A more merciful spirit had at last prevailed in reducing the blood-thirstiness of our criminal code. Men were no longer to be hanged out of hand for trivial offences. In 1832 the death sentence for forgery, coining, horse- or sheep-stealing was

abolished, as well as for stealing a post-letter or for sacrilege. Lord John Russell swept away many capital offences in 1837, with the result that where in that year there had been 438 executions, the number in 1839 had fallen to 56. Within a couple of years it came to be understood that capital punishment should be the penalty for murder alone—that a life for a life was all the law could exact. With this progressive amelioration of the code many old and barbarous practices disappeared. Traitors were no longer disembowelled after execution, nor were the bodies of hanged malefactors handed over to hospitals for dissection. Many more years were to pass before one great remaining blot was expunged from our criminal procedure. It was not until 1868 that executions in public ceased; till then the disgraceful scenes before the gallows were constantly re-enacted, and thousands of all classes, high and low, flocked to witness and gloat over the sufferings of a dying fellow-creature.

Trans-portation.

Many causes contributed to discredit transportation. Although the new countries, which it had in a measure created, refused at last to continue to be the receptacle of our social sewage, the system survived for some years longer in Crown colonies, although generally condemned in principle. The objections raised to it seemed logical and conclusive. It was, in the first place, inordinately costly; it was unequal in its incidence; and it entrusted to private persons the charge and discipline of those who were the prisoners of the State. Many of those it intended to punish found large fortunes in their exile, and the climax of absurdity was reached when emigration agents crying up the Australian El Dorado found competitors in the Law Officers who were franking the dregs of society to the same favoured spot. After the gold discoveries the paradox necessarily exploded.

MARY BATESON. Social Life.

At the time of the queen's accession the favourite form of dress was a wide skirt of seven or eight breadths, lined with stiff muslin, over which was worn a tunic of another colour. Vivid and inharmonious colours were fashionable, and a well-dressed lady is described as wearing a blue satin robe, black-violet mantelet lined with blue satin and trimmed with black lace, and

DRESS WITHOUT ART, 1836.
("*The Court Magazine.*")

an emerald green hat trimmed with blond and roses, as well as ribbon and feathers. A lady without a silk dress felt she had lost her self-respect. In 1824 the prohibition on foreign silks, long rendered almost nugatory by smuggling, was withdrawn, and subsequently the *ad valorem* duty of 30 per cent. on foreign silks was reduced to 15 per cent., and ultimately abolished. **Early Victorian Dress.**

MR. PERKINS DISCOVERED IN THE ZOOLOGICAL GARDENS.

(*From the drawing by M. A. Titmarsh, in "Comic Tales and Sketches," by W. M. Thackeray*)

The dress of children of 1840 will not be forgotten while Thackeray and Dickens are read; the little boys who wore nankeen trousers, white waistcoats, green coats, frilled shirt collars turned open over the shoulders, white stockings and pumps, and the little girls dressed at all hours and in all seasons in low-necked, short-sleeved frocks, with their hair in pig-tails, their legs in frilled trousers and white socks, and their feet in sandals.

Scott writes in 1818: "No man of experience will ever expect the breath of a Court to be favourable to correct morals. Half of the mischief is done by the publicity of the evil which corrupts those who are near its influence." In twenty years the accession of a young queen and her marriage to a man of singu- **The Court**

larly pure and earnest disposition, produced a remarkable change of tone. In 1841 Sir Robert Peel was seeking for men of high character and good education to become officers of Prince Albert's household. Writing to Lord Ashley, afterwards Lord Shaftesbury, he explains that he offers him a place because he must find "men of unblemished character." Ashley, indeed,

CHILDREN IN 1836, BY GEORGE CRUIKSHANK.
("*Sketches by Boz*," by *Charles Dickens, Vol. I.*)

believing that the offer was made to silence him, was not well pleased, and records that a certain Lord—"the hero of Madame Grisi"—had already had the offer of the Vice-Chamberlainship, but refused, saying, "Thank God, my character is too bad." Whatever may be the true explanation of the offer, there is no doubt that a change had come. Lord Melbourne, in a fit of temper, cried out "This damned morality will ruin everything"; but at a quieter time he would probably have acknowledged

that the queen's influence was as good for him as his knowledge of the world was useful to her.

QUEEN ADELAIDE, BY SIR W. BEECHEY, R.A.
(By permission of the Elder Brethren, Trinity House.)

Greville, describing the Court of 1838, says it is not gay, there is none of the sociability of a country house, "little trouble, little etiquette, but very little resource or amusement."

After the days of George IV. the pomp of the coronation and the display at Court entertainments greatly diminished. The coronation of George IV. cost £243,000, of William IV. £45,000, of Victoria £70,000. William's queen was so anxious that no expense should be incurred on her account, that she would not permit either the purchase or hire of a crown from Rundell's for her, but ordered that it should be composed of her own jewels, and made up at her own expense. At George IV.'s coronation Rundell's charge for the loan of jewels was £16,000.[1]

The last of the birthday balls, which recur so frequently in eighteenth-century journals, was given on the Princess Royal's eighteenth birthday. Strangely in contrast with times past is the entry which Lady Bloomfield made in her diary (1842) when she was maid-of-honour to the queen: "No one dined here last night, so we played at vingt-et-un, and I won eightpence."

Duelling.

In the twenties of this century there was no sign of any change of feeling with regard to duelling. The duel of the Dukes of Bedford and Buckingham (1822) in Kensington Gardens, was one of an ordinary type. Both fired in the air, and the Duke of Buckingham said, "My Lord Duke, you are the last man I wish to quarrel with, but you must be aware that a public man's life is not worth preserving unless with honour." His adversary answered, that upon his honour he had meant no offence to the Duke of Buckingham, and the matter ended. But in 1819, the Duke of Wellington's duel with Lord Winchilsea was generally acknowledged to be a mistake. Lord Winchilsea had opposed the founding of King's College, London. Wellington, as Prime Minister, supported it, and sent a challenge on the ground that Lord Winchilsea had declared the scheme to be in support of Popery. It was recognised that the Duke of Wellington's reputation for honour, courage, and zeal for the Church needed no challenge for its protection. In 1830 two judges declared the survivor in a duel to be guilty of murder, and in 1833 the seconds were declared to be involved; but while juries were willing to convict principals, only one jury convicted seconds. Already the middle classes were beginning to show pronounced hostility to what was considered an aristocratic abuse, or a crime which was only condoned because the accomplices were gentlemen. The practice of constant duelling between members of

[1] Raikes, "Journal," vol. i., p. 11.

THE QUEEN RECEIVING THE EUCHARIST AT HER CORONATION, JUNE 28, 1838

(After the painting by C. R. Leslie, R.A.)

Parliament was seen to be an absurdity. Feeling ran high at the time of the trial of Lord Cardigan, who was tried as a peer by the Court of the Lord High Steward, on a true bill returned by the grand jury. He was acquitted on a technicality; but when it was found that captured duellists would run the risk, if they were peers, of heavy expenses, and if they were commoners of imprisonment, there was less eagerness to challenge. In 1841,

DUEL BETWEEN THE DUKE OF WELLINGTON AND LORD WINCHILSEA.

(*From a satirical print of* 1829.)

two brothers-in-law, both officers, fought, and one was killed. The War Office refused the dead man's widow a pension, and superseded the survivor, who had left the country. In 1843 the Prince Consort proposed a Court of Arbitration to decide affairs of honour, but the scheme fell to the ground. However, a society for the abolition of duelling was formed, and the desired object was brought about, mainly by the Articles of War of 1844, which enjoined officers to offer and accept apologies, and made cashiering the penalty of duelling. In 1845 Roebuck's treatment of his challenge from Somers helped to bring duelling among Members of Parliament to an end. Roebuck brought the challenge before the House as a breach of privilege, and Somers apologised.

Sunday Observance.

About 1835 there was a strong recrudescence of Sabbatarianism. Sunday Cabinets and Cabinet dinners were no longer held, and other Sunday parties fell with them. When the railways began to spread, an attempt was made to stop Sunday travel, or at least to prevent third-class carriages from running. Roebuck wished to see the clubs, Hyde Park, and the Zoological Gardens closed, and sought vainly to impose a penalty

THE HORSES' PETITION FOR THE OBSERVATION OF THE SABBATH.

(*From a satirical print of* 1833.)

on bishops or clergy caught in the act of driving to church. Sunday letters were stopped, but in the provinces a Sunday delivery was recovered. In 1856, on the defeat of the Bill for the Sunday opening of the National Gallery and British Museum, Greville writes: "Cant and Puritanism are in the ascendant, and it will be well if we escape more stringent measures against Sunday occupations and amusements. It is stated that the Sabbatarians are so united and numerous that they could carry any election!" and Palmerston found himself obliged to accede to the Archbishop of Canterbury's request, that in deference to public opinion, the military bands in Kensington Gardens and elsewhere should be silenced.

New and Old Puritanism.

But the Puritanism of the first half of the nineteenth century has not much in common with the Puritanism of a Stubbs or a Prynne. A book such as "Cobbett's Advice to Young Men and (incidentally) to Young Women" is in its own way an "anatomy of abuses," but the tone is greatly changed. His attack is on luxury, on self-indulgence, on the slavery of the *tea*, and *coffee*, and other *slop-kettles;* his harangue is on the injury to health done by pouring pints of *warm liquid matter* down the throat, whether under the name of tea, coffee, soup, or grog; on the accursed decanter, which "cries footman or waiting-maid, puts bells to the side of the wall, screams aloud for carpets." When people say to him, "Lord, *what* is a glass of wine?" he answers, "Everything: it is the pitcher of the key, it demands all the other unnecessary expenses." He allows dancing, but no cards, dice, or chess-boards under his roof. The theatre he thinks might be an influence for good, but it is not, and for a simple reason. Not a word is allowed on the stage of which the Lord Chamberlain, that is, the Ministry, does not approve. He enjoyed the theatre till he knew that, but he has never been again since. His is largely a Puritanism of party politics.

MARY BATESON. Postal Reform.

THE number of letters and postcards and newspapers sent by post in 1884 had multiplied between eleven- and twelve-fold since 1837, when Rowland Hill first proposed his reforms. The removal of the General Post Office from Lombard Street to St. Martin's-le-Grand in 1829 had made some improvements in organisation possible, but it was felt that the development of the Post Office had not kept pace with the commercial growth of the country. That the postal receipts were slowly diminishing, though the population had increased by six millions in the twenty years, 1815–35, was evidence enough that something was wrong. Repeated advances in the letter-rates were powerless to increase the revenue, for means were always found to defraud the Post Office. As the charge on the letter could not be paid by the sender, those away from home arranged codes of signals which should serve to tell friends at home of their safety and welfare. The poorest sent an empty envelope, which was regularly refused at the door. Rowland Hill used to underline words

in newspapers, the meaning of which was understood at home. A line under the name of a Whig politician meant that the sender was well; a line under the name of a red-hot Tory meant that the sender was dangerously ill. The price of letters outside London varied from 4d. for the smallest distance to 1s. 8d. for the longest. A letter of a single sheet, weighing under an ounce, sent from Birmingham to London, cost 9d. If there were any

Photo: Walker & Cockerell.

SIR ROWLAND HILL, K.C.B., BY J. A. VINTNER.

(*National Portrait Gallery.*)

enclosure the letter was "double," and the charge doubled, though the weight were less than half an ounce; hence the practice of "crossing" letters. To ascertain whether there was an enclosure the Post-Office officials subjected every letter to a strong light, and were thus tempted to many malpractices. To evade the postal charges friends were made to carry parcels, proofsheets, letters; carriers made illicit posting a regular business, which occasional seizures and heavy penalties were powerless to check. From 1815–39 the net revenue was about one and a half million, and more than half a million was spent in

expenses of management. It was necessary not merely to weigh the letters and search for enclosures, but also to discover whether the letter had been written where it was posted, or had been carried part of the way to defraud the revenue. Each letter had to be marked at the destination with the amount of postage due; the postman must wait at each door to collect it; and as there were as many as forty possible varieties of inland rates, all this took time, and needed much office work. The principle which Rowland Hill's pamphlet on postal reform established was that the expense of a letter did not vary appreciably with the distance it was carried. He estimated the number of letters sent at 126,000,000, the proportion in the London district being 88,600,000 chargeable to 7,400,000 franked, and 30,000,000 newspapers, on which no charge was levied, as the Government stamp defrayed postage. He showed that with a total distribution of 126,000,000 and total cost of management nearly £700,000, the cost of primary distribution, namely from post-town to post-town, was about £426,000, of which only £144,000 was expenditure on transport, and the remaining £282,000 paid expenses which did not vary with distance. The average cost of a letter he estimated at $\frac{854}{1000}$d. each, of which $\frac{288}{1000}$d. was cost of transit, and $\frac{566}{1000}$d. cost of delivery, receipt, etc. These figures he obtained by including the heavy franked letters and newspapers in the reckoning; whereas if these had been paid for, the expense would be still less—only $\frac{9}{100}$d.—for chargeable letters did not make up a half of the total mail. Judging by the average weight of the Edinburgh mail from London, he showed the cost of transit in that particular case to be $\frac{1}{36}$d. He argued then that since it was impossible to collect such minute sums as $\frac{1}{36}$d. it was absurd to make the expense vary with distance, and he advocated a uniform charge to cover by one payment the whole expense of receipt, transit, delivery, collection, etc., and that no uniform rate should be higher than the minimum then in use (in the London district 1d.). The scheme was warmly taken up by the trading community, and in one session 2,000 petitions in favour of it were sent in. In Parliament it was hotly opposed, not on the ground that correspondence would fail to develop in accordance with Hill's anticipations, but on the ground that it would develop to impossible proportions. Lord Lichfield ridiculed the idea that the Post Office could carry

THE GENERAL POST OFFICE IN 1832.

480,000,000 letters, and pictured the bursting of its walls. Hill answered that he never before heard of the man of commerce who dreaded the too great expansion of his business. In 1870 Lord Lichfield's impossible number was more than doubled, in 1884 more than trebled.

The Penny Post.

On January 10th, 1840, Hill's scheme for a uniform penny post was in operation. Franking was abolished, and in May, 1840, a scheme for prepayment by means of stamps was in force. Hill had anticipated a five- to six-fold increase in the number of letters, and was at first disappointed. Many of the schemes which he had proposed to secure better organisation were not adopted, and on the first year the loss to the revenue was a million sterling. The following year it was £900,000. Hill had desired a great extension of rural distribution, and an increase in the number of deliveries. In London letter-boxes were only open from 8 a.m. to 7 p.m. No day-work was done in the Post Office; all letters went of necessity first to St. Martin's-le-Grand, and it took on an average fifteen hours for a letter posted in London to reach another part of London. The execution of his plan, he says, was entrusted entirely to men whose official reputation was pledged to its failure, who rejoiced at the end of the first week of trial when the increase in the number of letters sent fell short of Hill's expectation. Yet in the first two years, in spite of difficulties, the number of chargeable letters rose from 75,000,000 to 196,500,000; the London district post increased from 13,000,000 to 23,000,000, or nearly in the ratio of the reduction of the rates, while the illicit conveyance of letters was suppressed without effort. Every year reduced the loss, and by 1849 the system was in good order.

Later Post Office Developments.

In 1857 the book-post, established in 1848 at the rate of 6d. per pound for one volume only, was reduced. In 1859 the Money Order Office was remodelled. It had been started in 1792 as a private enterprise by three post-office clerks, and was not made an official department till 1838. In the following year the amount of money sent was over £300,000, in 1884 it was over £27,000,000. This change was brought about by reducing the charges, which at first were at the rate of 1s. 6d. for all sums between £2 and £5, and at 6d. for all sums under £2. The charges for registration were at first similarly prohibitive, and were gradually reduced from 2s. 6d. to 2d. The

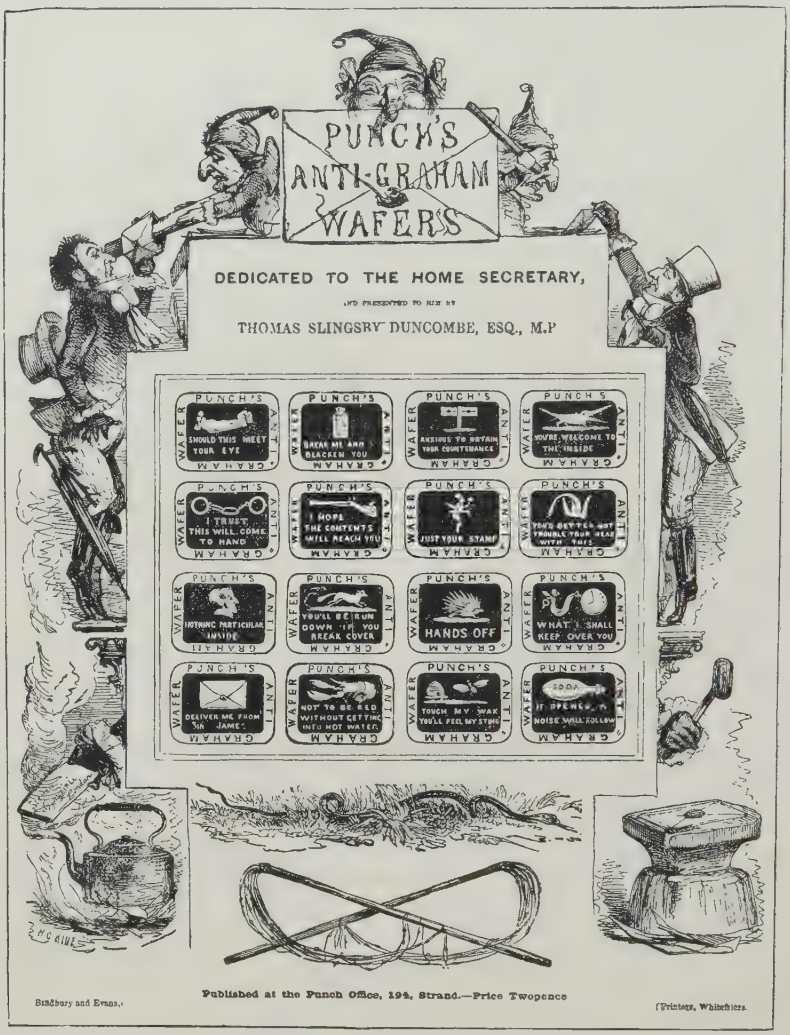
Post Office Savings Banks, opened in 1861, have proved to be of great social importance as a stimulus to thrift. In two years nearly 320,000 accounts had been opened, amounting to over £3,000,000. In 1882 the accounts numbered nearly 3,000,000, amounting to over £39,000,000. The encouragement of small investments in Government Stock, of the purchase of annuities and life assurances, had also become part of the work of the Post Office.

In 1860 the Post Office recovered control of the packet service, which since 1823 had been partly, and since 1837 entirely, in the hands of the Board of Admiralty. Postcards were first used in 1870, the year, too, in which telegraphy was made a function of the State. The daily average of telegrams was then 450; in 1883, 6,000, though the days of sixpenny telegrams were not yet come. In 1871 the half ounce of the penny post was raised to an ounce. The International Postal Union dates from 1874. In 1883 the Parcel Post began, and by 1885 many Parcel Post Conventions had been made with foreign countries.

In 1883–84 the total number of letters sent in the year was 1,322,086,900, of postcards 153,586,100. This gigantic development has been met by increased railway facilities and the use of railway sorting vans.

Envelopes and Stamps.

Considerable excitement was created in 1844 on the subject of letter-opening by Post-Office officials, and this led to the use of various forms of wafer and envelope intended to ensure secrecy. The origin of the stamp is involved in some obscurity. Stamped covers for newspapers were used experimentally by Charles Whiting in London under the name of "go-frees" in 1830; in 1834 Charles Knight, of the Stamp Office, recommended their use generally. In 1834 James Chalmers, a printer of Dundee, invented an adhesive stamp; and in 1837 Rowland Hill suggested that "little bags called envelopes" should be printed with a stamp and generally used, while small stamped detached labels, with a glutinous wash at the back, to be attached without a wafer, should be used under certain exceptional circumstances to frank the letters of those ignorant persons who found a difficulty in using the stamped cover. The design for the stamped envelope was drawn by Mulready (p. 64), and his "allegorical cover" gave rise to much amusement. In

the centre at the top sat Britannia throwing out her arms to winged Mercuries, and on either side of Britannia were groups

PUNCH'S
ANTI-GRAHAM
WAFERS
DEDICATED TO THE HOME SECRETARY,
AND PRESENTED TO HIM BY
THOMAS SLINGSBY DUNCOMBE, ESQ., M.P
SHOULD THIS MEET YOUR EYE
BACKS ME AND BLACKENS YOU
ANXIOUS TO OBTAIN YOUR COUNTENANCE
YOU'RE WELCOME TO THE INSIDE
I TRUST THIS WILL COME TO HAND
I HOPE THE CONTENTS WILL REACH YOU
JUST YOUR STAMP
YOU'D BETTER NOT TROUBLE YOUR HEAD WITH THIS
NOTHING PARTICULAR INSIDE
YOU'LL BE RUN DOWN IF YOU BREAK COVER
HANDS OFF
WHAT I SHALL KEEP OVER YOU
DELIVER ME FROM SIR JAMES
NOT TO BE RED WITHOUT GETTING INTO HOT WATER
TOUCH MY WAX YOU'LL FEEL MY STING
IT OPENS WITH A NOISE WILL FOLLOW
Bradbury and Evans.
Published at the Punch Office, 194, Strand.—Price Twopence
Printers, Whitefriars.

PUNCH'S ANTI-GRAHAM WAFERS.

(*Reproduced by special permission of the proprietors of "Punch."*)

of Eastern merchants, camels and elephants, missionaries and Red Indians. "On the right stands a dutiful boy reading to

his anxious mamma an account of her husband's hapless shipwreck, who, with hands clasped, is blessing Rowland Hill for the cheap rate at which she gets the disastrous intelligence." Vast numbers of this envelope were printed, but they met with no sale. The public would not take them at the "price of 1s. 3d. for the envelopes and 1s. 1d. a dozen for the sticking plaster." The first stamps were printed in black with the obliterating mark in red, but chemists discovered that the red could easily be washed out. It was only after many strenuous efforts that a matrix was produced which could bid defiance to forgers, and for long it was expected that servants would destroy letters in order to use the stamps, and that all leisured people would devote their time to erasing the defacement marks, or imitating the stamp. The first general issue of penny stamps of the once familiar brick-red form was made January 1st, 1841. In 1885 the issue of stamps for the year amounted to 114 tons.

JAMES COLVILLE. Scotland.

The first election under the Reform Bill introduced to the delighted gaze of burghers round their market crosses the novel sight of the hustings, and of candidates soliciting their votes. At Glasgow, instead of the old hole-and-corner meeting of four delegates to choose for thirty-three electors, over seven thousand new voters, in open day, had six candidates to select from and the excitement of a two days' poll. Jeffrey, who, as Lord Advocate, had drafted the Scotch Bill, was the hero of the hour when he was returned for his native Edinburgh. The capture of Mid-Lothian, citadel of the old party, was a still greater triumph. The entry of Earl Grey into Edinburgh for the Reform banquet (1834) was far finer than the reception of George IV. An improvised Aladdin's palace, glorious with the novel splendours of gaslight, re-echoed the oratory of the victors. A *Times* reporter posted up to London from the meeting in thirty hours. He left the hall at midnight of that Monday on which the meeting was held, and by midday of the following Friday the north mail brought the London newspapers with the report of the speeches.

The Triumph of Reform.

Burgh Reform, 1834.

The general awakening of the hour lent fresh impetus to a movement, now of half a century's growth, that struck far deeper into the roots of social life than Parliamentary reform.

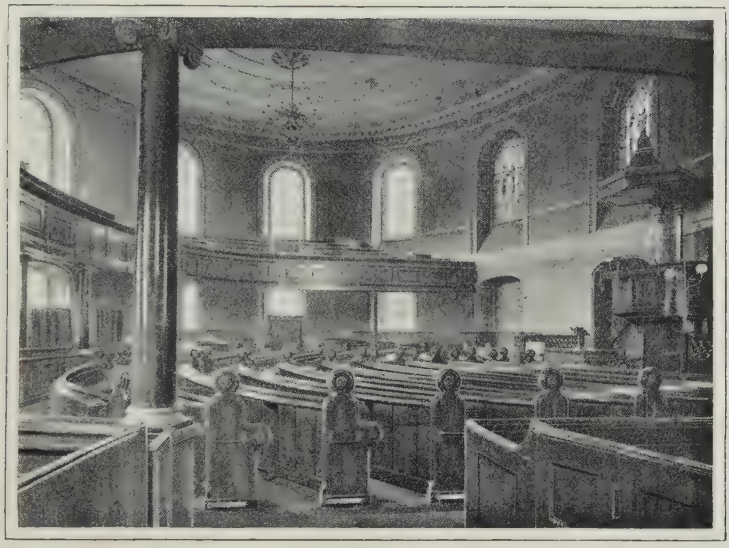
The growth of cities and the rise of industry emphasised the need for the reform of the medieval oligarchies in burghs. The Common Good was in many cases alienated, and cities like Edinburgh hopelessly bankrupt. Money had been borrowed anyhow, and spent in ill-concealed jobbery. But the reward of reformers came at last. Before the close of 1833 Scotland secured her Municipal Corporations Bill, in advance of England. The popular elections to town councils permanently changed the whole country, making it now possible to realise the elementary needs of civic life—water, lighting, cleaning, paving, police, pauperism, sanitation.

The Church Patronage Question.

The Act of Queen Anne (1712), in restoring to lay patrons the right of presentation to benefices, had proved a fruitful source of heart-burning and schism. The new political forces were now to be devoted to reform of those abuses of patronage which ran counter to the deeply cherished convictions of the people. The man of the hour was Thomas Chalmers, then recently appointed (1828) to a theological chair in Edinburgh. Eloquent above his compeers, simple-minded, great-hearted, he was devoted to the new spiritual movement. Seeing that the Establishment, in which he had implicit faith, had proved itself unable to Christianise the masses, he took up the cause of Church Extension. His success here, however, precipitated the Disruption, for it helped to make the party of progress predominant in the General Assembly. Hence arose the bitter struggle which began with the Veto Act (proposed 1833, adopted 1834), and ended with the creation of a free and self-supporting Church, independent, as it was believed, of State control (1843). The Veto Act, while it attempted to meet the abuses of patronage by giving the people the privilege of rejecting an unacceptable presentee, had the fatal defect of being but an Act of the General Assembly and not of Parliament. The effect of its operation was speedily to bring the Church into conflict with the civil power; for the Court of Session and House of Lords—notably in the Auchterarder test case—supported the rights of patrons and the rejected presentees. The Non-Intrusionists, as the dominant party were called, represented their position to Government in their Claim of Right (1842); but to the English mind the spiritual independence claimed seemed unreasonable, metaphysical, and impracticable. Defeated in Parliament in

the spring of 1843, the Vetoists, numbering nearly five hundred, solemnly withdrew (18th May) from the General Assembly and from the Church of their fathers, in which, as they believed, their position had been rendered intolerable. The Disruption.

The Disruption, most notable event since the '45, was a huge object-lesson in that interdependence of Church and State which still offers puzzling political problems. Time, however, has removed that phase of Church polity which produced Church and State.



THE SCENE OF THE DISRUPTION: ST. ANDREW'S CHURCH, EDINBURGH.

the cleavage of 1843. The aim of the Non-Intrusionists—a free Church in a free State—has long ago been realised for all sects alike among us. More momentous were the political consequences. Through the inexorable logic of circumstances Chalmers himself and the great body of his followers drifted more and more into the voluntary position as the only tenable one outside an Establishment. For a while he was stoutly opposed by the Voluntaries. To them patronage was of no moment, but the Church extension of the day was intolerable as an aggrandisement of the Establishment at the general expense. Their opposition here led to an organisation of forces which soon bore fruit in their support of the Abolition

The Free Kirk and Politics.

of Tests, and their determined resistance to the Maynooth Grant (1846) and the Edinburgh Annuity Tax, a species of Church rates. Of deeper moment was the action of Scottish Nonconformity on Imperial questions now arising. As far back as 1820 the Edinburgh Chamber of Commerce sent a petition to Parliament in favour of Free Trade, the very first of its kind; and the ultimate triumph of Cobden and Bright was in no small measure due to the support of the Scottish Dissenters. The enthusiasm thus evoked led to great banquets and public meetings (1840–46) and liberal contributions to the war-chest.

Social Aspects of the Disruption.

The unpleasant fruits of the great schism showed themselves for more than a generation, producing much friction, especially through the refusal of sites for churches and manses and many petty acts of retaliation on both sides. The spectacle, however, of a young and self-supporting Christian organisation stimulated its older rival. Hence has arisen that renascence of the Church of Scotland, with its broadening of doctrine and ritual, leavening the thought and practice alike of both the great Presbyterian bodies.

Railways.

In the early days the iron road and the steam motor were developed on independent lines. Up to 1830 ten Bills had been sanctioned for railways by horse traction or fixed engine. The earliest ran (1811) between Kilmarnock and Troon. Facility of goods-haulage was alone considered on these lines, but a very successful one, Edinburgh to Dalkeith (1831), speedily developed an extraordinary passenger traffic. Horse-traction was employed on this line till 1845. On the other hand, steam carriages were running on the highways—as, for example, Scott Russell's between Glasgow and Paisley—but the explosion of the boiler stopped the experiment here. The effect of friction at high speeds was little understood, till Maclaren of the *Scotsman* proved by mathematical reasoning (1824) that on iron roads twenty miles an hour and probably more might be attained. His views attracted much attention on the Continent and in America. The earliest use of the locomotive on rails was in 1827, over a short mineral line near Glasgow. A rival local line from Garnkirk to Glasgow was opened in 1831 by George Stephenson in person; and this became the nucleus of the Caledonian system. The first venture on a large scale was the Edinburgh and

Glasgow (1842), costing a million and a quarter. Its success popularised the railway for passengers, and led to large schemes. Hitherto merely short local ventures had been risked, through routes not being contemplated. Numerous small independent lines were, by a long series of amalgamations, developed into the great systems. Scotland felt the railway craze of 1845–46, fifteen Bills appearing in the former year, fifty-eight in the latter. Before 1846 the East Coast Trunk, forming the North British, was open between Edinburgh and Berwick, and a connection was being projected with Dundee, Perth, and Aberdeen, through the steam ferry across the Forth (1843), and the completion of Granton Pier (1845). The stage coaches were still in full swing, ninety leaving the capital in one day.

The Poor Law, 1845

The Scottish Parliament legislated for the poor as far back as 1575, but assessment was never made compulsory. The votive offerings of the benevolent were distributed through Kirk sessions, but always as supplementary to the charity of friends and neighbours. The able-bodied destitute had no legal claim, nor was maintenance ever contemplated. This voluntary system, aided by an occasional resort to a tax, suffered a great blow from the rise of Dissent (1733), the break-up of Feudalism (1748), and the consequent shifting of the poorer population. The sale of estates also led to absenteeism. All this was followed by an economic revolution which substituted machine for hand labour. Chalmers was an eloquent advocate of the old, and, as he believed, truly Christian system of relief. Alison, an Edinburgh medical professor, approached the subject from another point of view, and demonstrated (1840) the disastrous failure of voluntary effort and the intimate connection between destitution and the too frequently recurring epidemics. His revelations led to a Royal Commission of Inquiry (1844), followed by the Act (1845) under which legal relief is still administered.

P. W. JOYCE. Ireland.

In 1838 some Protestant gentlemen of Cork who had started a Temperance Society, induced the Rev. Theobald Mathew, a young Capuchin friar, to sign the Total Abstinence pledge; after which he devoted himself heart and soul to the cause of Temperance. Under his guidance the movement spread with extra-

ordinary rapidity. He travelled through every part of Ireland, preaching to great multitudes, and administering the Total Abstinence pledge to hundreds of thousands of all religious denominations; so that in a few years drunkenness, which had been woefully prevalent among all classes, almost disappeared, and the whole face of society was changed. A number of great distilleries and hundreds of public-houses were closed, and crime sank to less than half. Like most great movements it left its

Photo : Walker & Cockerell.
FATHER MATHEW, BY E. D. LEAHY.
(*National Portrait Gallery.*)

permanent mark; for though drink has in great measure resumed its sway, yet drunkenness, which before Father Mathew's time was a fashionable vice—a thing to be proud of—came to be looked upon with disapproval, and sobriety to be commended as a virtue.

The Repeal Agitation.

The agitation for a repeal of the Legislative Union between Great Britain and Ireland, carried on in a half-hearted sort of way since about 1810, never took hold of the country till 1840. In that year O'Connell founded the Repeal Association, and in 1843 began to hold what came to be called "Monster Meetings," from the great numbers attending them, to give expression to the popular desire for Repeal. From March to August of that year he addressed about thirty vast assemblages, all perfectly sober, peaceable, and orderly. At Tara, the ancient seat of the kings of Ireland, a quarter of a million of people were gathered.

The next was to be at Clontarf on the 8th of October; but on the evening of the 7th it was prohibited by Government proclamation. After this, O'Connell and several others were arrested, and in May, 1844, were tried and convicted of conspiracy. They were all sentenced to imprisonment; but the judgment was reversed by the House of Lords on the ground that the jury had been grossly packed, and O'Connell and the others were released after an incarceration of three months. Whether it was from age, or infirmity, or the effects of the imprisonment, O'Connell lost heart after this, and the Repeal agitation gradually died out.

WOMAN BEGGING AT CLONAKILTY.

But all public questions in Ireland were now overshadowed by a terrible calamity. In 1845 and 1846 the potato crop, the almost exclusive food of the peasantry, failed; and a famine followed in 1846 and 1847, quite unprecedented in Ireland, and perhaps never equalled in the history of any European country. In 1847 the people died by tens of thousands of starvation all over the country. The Government, though adopting some measures in the shape of public works and other plans of relief, utterly failed to cope with the dreadful crisis. Noble efforts were made by the English people, and private subscriptions came in enormous amounts, especially from England; but, in spite of all, one-fourth of the population of Ireland perished by famine and its attendant epidemics in 1846 and 1847. Yet notwithstanding the failure

Famine of 1846-47.

BOY AND GIRL AT CAHERA.
("*Illustrated London News*," 1847.)

of one particular crop, the country produced ample food for its population in these two years without the importation of one ounce of provision; and during the whole time that the people were perishing of starvation, scores of ships left the Irish ports every day for England laden with corn. The repeal of the Corn Laws in 1846 never touched the famine, for the good reason that, so far as corn was concerned, Ireland was an exporting, not an importing, country. It was a boon to the English people, who live mostly in cities and towns chiefly by manufactures; but the only result for Ireland was the ultimate ruin of one of its main industries, corn-growing, and of all those depending on it.

THE HUT IN THE OLD CHAPEL YARD, SKIBBEREEN.
("*Illustrated London News*," 1847.)

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CHAPTER XXIII.

THE RULE OF THE MIDDLE CLASS. 1846–1865.

LLOYD C-SANDERS. Political History.

After the fall of Sir Robert Peel, Lord John Russell, having made futile overtures to the Peelites and Mr. Cobden, constructed a Whig Ministry. Except for Lord Palmerston, who again became Foreign Secretary, it contained few elements of strength. Lord Grey swallowed his scruples and went to the Colonial Office. Lord Lansdowne was President of the Council, Sir Charles Wood Chancellor of the Exchequer, Sir George Grey Home Secretary, and Macaulay, Paymaster of the Forces.

The Irish Famine.

The potato crop had failed again in Ireland, and famine was upon the country with pestilence in its train (p. 339). The measures adopted to meet the crisis were better in intention than in result. The Government started relief-works of a public character, such as road-making. Unfortunately, no control was exercised over the 600,000 applicants, and the grossest abuses prevailed on the part of contractors and labourers. The suggestion of the Lord Lieutenant, Lord Bessborough, that the people should be employed on works intended to improve private property, was only partially carried out. With the fear of the Manchester School before his eyes, Lord John allowed wheat to be exported from Ireland (p. 340), and left the food-supply to the ordinary channels. Tradespeople, therefore, made fortunes while the peasantry starved. Awakened at length, the Government suspended the remaining duties on corn, and distributed food through the agency of local committees. It also relaxed the Poor Law by permitting outdoor relief to the able-bodied paupers. Lord George Bentinck's scheme for building State railways, however, was rejected on inadequate grounds.

Private generosity came to the rescue of the Government, and at last the famine was stayed. But it had left bitter memories behind it. The modification of the Poor Law had encouraged the landlords to evict, and added to the crowds of

Eviction and Land Reform.

reluctant emigrants. Nor was the Encumbered Estates Act, which came in 1849 as a finishing touch to Lord John Russell's Irish policy, altogether a success. It got rid of bankrupt landlords, but it established an unsympathetic class in their stead (p. 516).

Lord Palmerston returned to the Foreign Office with the

LORD GEORGE BENTINCK, AFTER SAMUEL LANE.

(By permission of the Corporation of King's Lynn.)

full intention of having his own way. He soon found himself at issue with Guizot and Louis Philippe over the Spanish marriages —a squalid intrigue by which the French king contrived to secure Bourbon husbands for Queen Isabella and her sister. When it succeeded, he informed the French Ambassador that the *entente cordiale* was at an end, because France neither wished for cordiality nor an understanding. He protested against the annexation of Cracow by Austria; he employed the British fleet to put down a revolutionary movement in Portugal; he despatched Lord Minto to lecture the rulers of the various Italian

Foreign Policy.

States on the merits of constitutional government. The envoy started, however, two years too late, and similar advice addressed, later on, to the Queen of Spain was met by a request to the British Minister to quit the country.

In 1848 the storm of revolution, which Palmerston had in a measure foreseen, swept over Europe. Thrones tottered, and the

LORD PALMERSTON, BY W. BARRAUD.
(*By permission of the Right Hon. Sir Evelyn Ashley.*)

Orleanist dynasty fell. In England the Chartists summoned a monster meeting to Kennington Common, and timid folk trembled for their lives and properties. But the military precautions of the old Duke of Wellington were admirable, and the special constables turned out. Feargus O'Connor's nerves failed him at the pinch, and when the signatures of the huge petition presented to Parliament were discovered to be largely in the nature of practical jokes, Chartism underwent total eclipse (p. 490). In Ireland disaffection ran to greater lengths, but the

The Year of Revolution.

Chartism.

Young Ireland.

Government was prepared. The prompt arrests of John Mitchel, the editor of the *United Irishman*, Meagher "of the sword," and Smith O'Brien, together with the suspension of the Habeas Corpus Act, forced the hand of Young Ireland. Smith O'Brien made a childish attempt to surprise the police at Ballingarry. Dismal failure was the result; he was captured, tried, and condemned to death, but the sentence was, of course, remitted.

Palmerston and the Court.

Palmerston was unpopular at Court for his anti-German policy and his impatience of all control. He appealed to the imagination of the nation at large by his *civis Romanus sum* speech, in which he justified the Government for blockading the Greek coast. In it genuine injuries inflicted on British subjects were adroitly mixed with the dubious grievances of a Gibraltar Jew calling himself Don Pacifico, and his splendid clap-trap carried away the House in spite of the common-sense of Sir Robert Peel. A few days afterwards Peel was dead, killed by a fall from his horse. Unfortunately, Palmerston presumed too far on his popularity with the nation. His constant neglect of the Premier's wishes brought down on him a memorandum from the queen, in which he was commanded to state his proposals in each case and make no alterations after her sanction had been granted. This undertaking he jauntily disregarded, until in December, 1851, he proceeded to give his unofficial approval of the *coup d'état* by which Louis Napoleon overthrew the French Republic, and to repeat that opinion in a despatch to Lord Normanby, our Ambassador at Paris. He was summarily dismissed, after he had declined the Lord-Lieutenancy of Ireland. "Palmerston is out," wrote Macaulay in his diary. "It was high time, but I cannot help feeling sorry."

Fall of the Russell Ministry.

The Ministry did not long survive the loss of its most important member. Its legislation had been chiefly Irish, and the Radicals were bitterly dissatisfied. For the moment the Government had gained credit with the unthinking by passing in 1851 the Ecclesiastical Titles Bill, directed against the restoration of the Roman Catholic hierarchy in England. But the panic soon spent itself, and the measure remained a dead letter. Lord John, who had vainly attempted to reconstruct the Ministry by admitting Lord Aberdeen and Sir James Graham, met Parliament in evil plight. He introduced a Militia Bill to meet the popular demand for more adequate defences against

invasion. Lord Palmerston moved an amendment, which the Government declined to accept, and, as he told his brother, "I have had my tit-for-tat with John Russell, and I turned him out."

The First Derby Ministry.

The queen sent for Lord Derby as the leader of the strongest party in the House. He formed a Conservative Ministry of untried material, with Mr. Disraeli as his Chancellor of the Exchequer. Thanks to Palmerston's patronage, the Government did reasonably well. It carried a Militia Bill which gave general satisfaction, and Mr. Disraeli's adroit Budget was remarkable for a frank acceptance of the doctrines of Free Trade. The general election in the summer, however, left the Conservatives still in a minority. Taunted with Protectionist leanings, Disraeli produced his second Budget in December. It included extensions of the house and income taxes, and Mr. Gladstone attacked it in a memorable speech. The Government was defeated by 305 votes to 286 through the combination of Whigs, Radicals, and Peelites. "This I know," said Mr. Disraeli, "that England does not love coalitions."

The Sikh War.

Meanwhile Lord Dalhousie had extended the limits of British India. Soon after he assumed the government (1848) the Sikhs rose again, but operations had to be delayed until the hot season was over. On the 13th of January, 1849, Lord Gough gained a hard-won victory at Chillianwallah, and on the 14th of February he dispersed the Sikh forces and their Afghan allies at Gujerat. The Punjaub was definitely annexed, and placed under a board on which sat the two Lawrence brothers. The Burmese had again to be chastised for the maltreatment of British subjects, and they were compelled to cede the province of Pegu (1852). Under the doctrine of lapse, which did away with the right of adoption, Lord Dalhousie suppressed the ruling houses of numerous native States. Among them were Sattara, the important principality of Nagpore, and the little State of Jhansi. Oudh was annexed, not from the failure of heirs, but because of the king's gross misgovernment. This policy was fiercely attacked after the outbreak of the Mutiny. Adoption, however, had been the exception rather than the rule under the Mogul Empire, and the significance of the annexation policy can easily be overstated. To Dalhousie, at any rate, India owes railways, the telegraph, and the development of canals and

irrigation. He promoted education and put down dacoity and infanticide.

Coalition Ministry.

The Peelites and Whigs had been rapidly drawing together and, on the defeat of the Conservatives, a Coalition Government was formed under Lord Aberdeen. The former group secured the bulk of the Cabinet appointments, Gladstone becoming Chancellor of the Exchequer, the Duke of Newcastle Secretary for War, and Sir James Graham First Lord of the Admiralty. Of the Whigs, Lord John Russell went to the Foreign Office, but soon gave place to Lord Clarendon, though he continued to lead the House of Commons. Lord Lansdowne entered the Cabinet without office, and Lord Palmerston, to the general surprise, became Home Secretary. Sir William Molesworth, who imagined himself a Radical, was First Commissioner of Works.

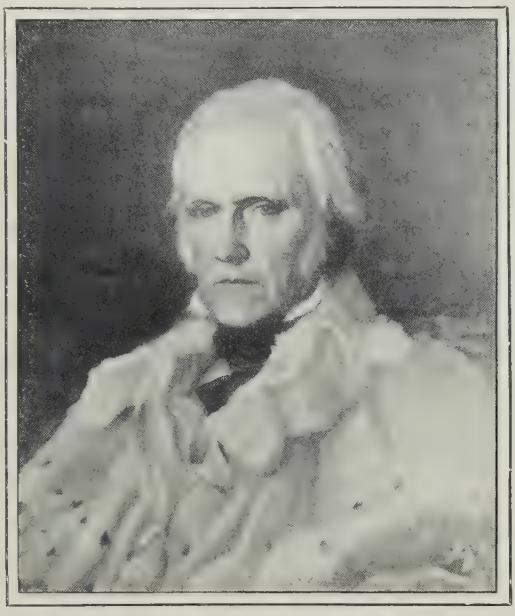
Gladstone's First Budget.

The Aberdeen Government began extremely well. Gladstone's first Budget was his greatest. It made further advances towards Free Trade, and was accompanied by an ingenious though unexecuted scheme for the reduction of the National Debt. In the session of 1853, too, transportation was finally abolished, and the Civil Service of India thrown open to competition. The following year witnessed the passage of the Oxford University Reform Act, based on the report of a Royal Commission. A Parliamentary Reform Bill was introduced, but it was much disliked by a section of the Cabinet, of whom Lord Palmerston pushed his objections to the length of a brief resignation. Occurrences in the East, however, soon drove domestic legislation out of the thoughts of Parliament, and the measure was withdrawn.

The Eastern Question.

The Eastern question was revived by a trivial quarrel about the guardianship of the Holy Places in Palestine. Their custody was disputed by the Greek and Latin priests, of whom the latter were actively backed by the Emperor of the French. The Sultan decided in their favour, and the Czar Nicholas blazed out in semi-barbaric anger. He sent Prince Menschikoff to overawe the Porte, and, by way of counter-menace, Napoleon III. despatched the French fleet to Smyrna. The Russian envoy retired, baffled by our ambassador, Lord Stratford de Redcliffe, but in the meantime the French and English squadrons had advanced to the Dardanelles. On July 2nd, 1853, the Russian armies crossed the Pruth, and occupied the Turkish provinces of Mol-

davia and Wallachia. The Porte was advised not to declare war, and the Vienna Conference assembled in the hope of arresting the clash of armies. The Sultan, however, insisted on modifying the terms known as the Vienna Note, and the Czar refused to accept his alterations. While Lord Stratford de Redcliffe was pressing a fresh note of his own on the Porte, it suddenly



LORD STRATFORD DE REDCLIFFE, BY G. F. WATTS, R.A.
(*National Portrait Gallery. By permission of Mr. F. Hollyer.*)

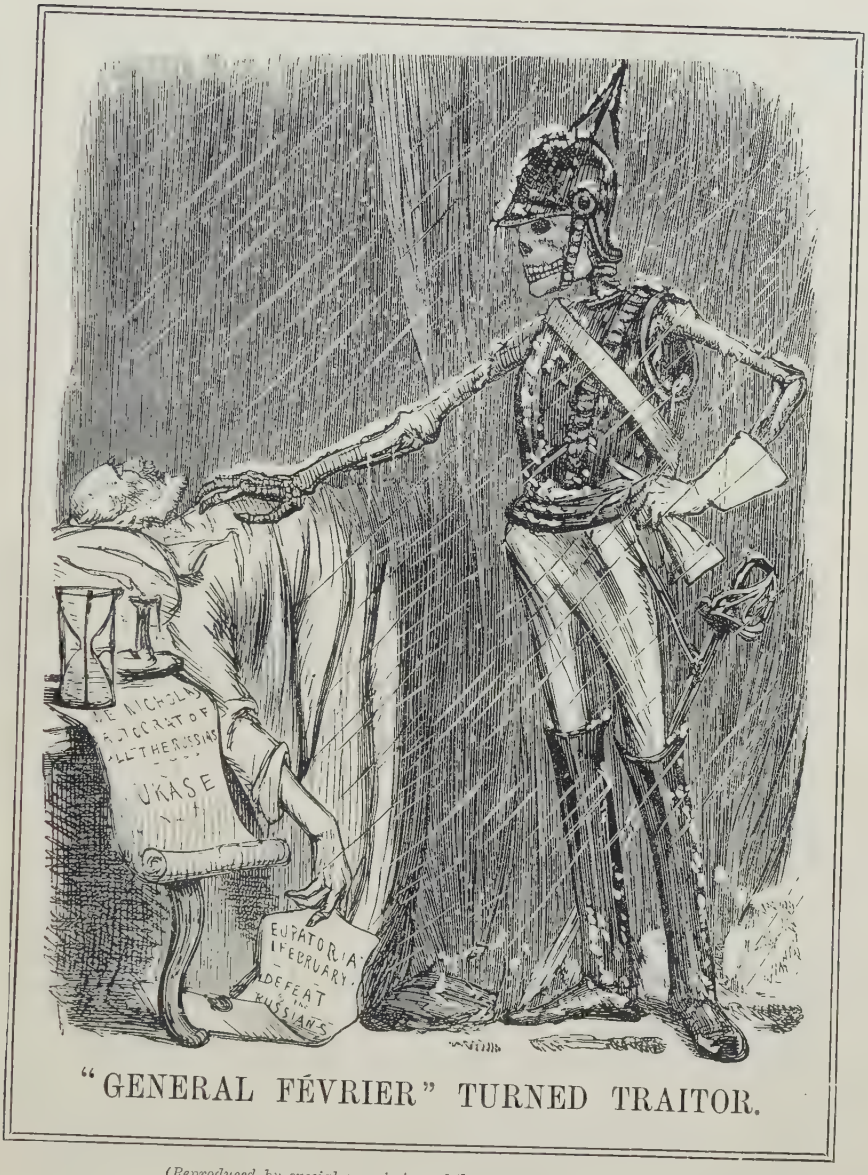
declared war. The Russians (December 12th) fell upon the Turkish squadron at Sinope, and burnt, sank, or captured it. Early in January the allied fleets entered the Black Sea.

The Crimean War.

Negotiations still continued, but to no purport, and on March 28th, 1854, England and France declared war against Russia. Unfortunately the war party in the Cabinet, Lord Palmerston and Lord John Russell, distrusted Austria, and no adequate attempt was made to secure her support. Checked by the defence of the Danubian fortresses, the Czar directed his forces to recross the Pruth, and Austria remained neutral. The Russian Black Sea fleet withdrew under the guns of Sebastopol, and Sir

Charles Napier drove the Baltic fleet into Cronstadt, though he could make no impression on that fortress. The allies determined on a descent upon the Crimean peninsula, the idea originating with the Emperor of the French. Their armies had already suffered severely from cholera on the marshy ground of Varna. Nevertheless, on the 20th of September the battle of the Alma was fought and won. The opportunity of taking Sebastopol by an attack from the north was lost, and the allies made, instead, a long and hazardous flank march to the southern coast of the peninsula. When the bombardment began (October 17th) the defences of the stronghold had been materially strengthened. Eight days later Menschikoff arrived to relieve it, and at Balaclava the British cavalry won the day despite Lord Raglan's ineffective generalship. The glorious but useless charge of the Light Brigade has won an immortality which has been denied to the decisive onset of Scarlett's heavy cavalry. At Inkerman (November 5th) the first line was left for hours without support, but it repulsed the Russians again and again. Menschikoff drew off, and the allies were fairly free to press the siege. But winter was upon them; a storm wrecked the transports on November 14th, leaving the troops destitute of warm clothing and almost shelterless; the roads became quagmires (p. 364). The men, worn out by work in the trenches, died of sickness by hundreds. The letters of Dr. Russell, the correspondent of the *Times* (p. 368), roused the nation to fresh efforts, and incidentally drove the Aberdeen Ministry out of office. Supplies were despatched hot-haste, together with trained nurses under Miss Nightingale. In the spring the prospect improved apace. The Czar Nicholas died, and was succeeded by the peace-loving Alexander II. A Sardinian contingent joined the allies, and, in conjunction with the French, beat off the Russians at the Chernaya. The siege went on, and at last, in September, the allies ventured an assault. The British force was beaten back from the Redan, but the French, under Mac Mahon, carried and held the Malakoff. Thereupon the Russians evacuated Sebastopol by night, and on the 8th of September the place surrendered. Against this decisive success had to be set the fall of Kars in Asia Minor, where the valour of General Fenwick Williams was of no avail, since he was left without reinforcements by the Turks.

Sufferings of the Troops.



"GENERAL FÉVRIER" TURNED TRAITOR.

(Reproduced by special permission of the proprietors of "Punch.")

The First Palmerston Ministry.

The Coalition was defeated on a motion of Mr. Roebuck's for an inquiry into the Navy and War Departments. Lord John Russell, whose conduct towards Lord Aberdeen had throughout been the reverse of generous, resigned directly it was announced. A combination of Conservatives, Radicals, and discontented Whigs beat the Government, on January 29, by a majority of 127. A ministerial interregnum followed, during which Lord Derby, Lord Lansdowne, and Lord John Russell in vain attempted to scrape Cabinets together. Then the queen sent for Lord Palmerston—"the inevitable," as he described himself. He formed a Whig and Peelite Ministry, but the Peelites resigned almost immediately because the Premier agreed to the appointment of Mr. Roebuck's committee. In its final form the Cabinet included Lord Lansdowne without office, Lord Clarendon as Foreign Secretary, Sir George Cornewall Lewis as Chancellor of the Exchequer, Lord Panmure as Secretary for War, and Sir George Grey as Home Secretary.

Peace of Paris.

Lord John Russell, become Secretary to the Colonies, was despatched to the Conference sitting at Vienna. Terms of peace were there suggested by Austria, which both the French and English envoys thought might be accepted. They were, however, disavowed by their respective Governments; and Lord John, threatened by a vote of censure, ceased to be Colonial Secretary. After the fall of Sebastopol, Austria made fresh proposals, this time in the form of an ultimatum to Russia. A congress met at Paris, and Lord Clarendon and Lord Cowley, disconcerted by the double-dealing of the Emperor of the French, had to consent to rather unsatisfactory terms (March, 1856). There was a mutual restoration of conquests, including that of the Principalities and Kars to the Turk. The Black Sea was neutralised to ships of war and military arsenals. Sebastopol was destroyed as a fortress, and the Danube thrown open to navigation. By the accompanying Declaration of Paris, England abandoned the right of search with regard to neutral vessels, in return for the agreement that blockades, to be recognised, must be effective. The Powers also put on record the statement that "privateering is and remains abolished." By a separate treaty, signed April 13th, Austria, France, and England guaranteed the continuance of the Ottoman Empire.

The Palmerston Ministry did not trouble itself overmuch

about domestic legislation. The outlook abroad was disquieting, owing to the pettifogging evasions of her treaty obligations by Russia and the shiftiness of the Emperor of the French. The country, too, became involved in wars with Persia through the Shah's attack on Herat, and with China because of the seizure of the lorcha *Arrow* (p. 369). Sir James Outram made short work with the Persians. The Chinese agreed to peace in 1858, after the fall of Canton. However, they fired on the British Minister, who was on his way to get the treaty ratified, and in 1859 a joint English and French expedition was sent against them. After a check on the Peiho, it took Pekin, and the Treaty of Tientsin, which opened more ports to trade, was confirmed in 1860.

Persian and Chinese Wars.

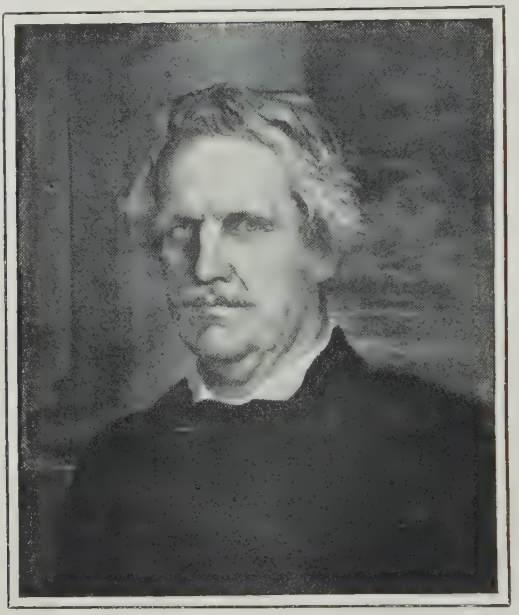
Mr. Cobden moved a resolution condemnatory of the Chinese war, which the Government treated as one of censure. It was defeated by sixteen votes, in spite of the Premier's "bow-wow" speech—as Greville calls it—and went to the country. At the general election of 1857 the Manchester school was wiped, for the time being, off the face of the earth. But Palmerston's triumph was brief. In the following February, at the demand of Napoleon III., whose nerves had been shaken by Orsini's attempt on his life, the Government brought in a Conspiracy to Murder Bill, which was regarded as threatening the right of asylum. Unfortunately, the violent language used across the Channel irritated the House, and Ministers were defeated and resigned.

Palmerston's Fall.

The outbreak of the Indian Mutiny in 1857 (p. 369) took even the most experienced officers and administrators completely by surprise. It resolved itself into an unreasoning expression of discontent and fanaticism, worked upon by secret intrigue. The sepoys had been indulged until they fancied that the destinies of India lay in their control. They were horrified by the issue of new Enfield cartridges said to be greased with the fat of beef or pork, and thus unclean both for Hindoo and Mohammedan. They saw their opportunity in the absence of those British regiments which had been ordered to Persia and the Crimea, and had never been replaced. There was a sputter of mutiny on February 25th at Barrackpore; on the 10th of May it broke out in earnest at Meerut, where the officers were murdered. Regiment after regiment raced off to Delhi, where the restored

The Indian Mutiny.

Emperor became a centre of disaffection. Happily, the Bombay and Madras Governments rose to the crisis, and John Lawrence held down the Punjaub. But the North-west and Oudh were gone, except for a few hard-pressed garrisons; and in Central India, though Scindiah and Holkar were staunch, their body-guards went over to the enemy. Nana Sahib besieged the crazy outworks of Cawnpore, and on the 27th of June perpetrated that



LORD LAWRENCE, BY G. F. WATTS, R.A.
(*National Portrait Gallery. By permission of Mr. F. Hollyer.*)

awful massacre which has rendered his name for ever infamous. Too late to save the garrison, Havelock and Outram relieved Lucknow on September 24th, only to find themselves besieged. Until Delhi fell, India could not be reckoned a British possession. The siege flagged, owing to lack of men and ordnance, but John Lawrence's Sikh levies and the arrival of the siege-train decided the matter, and on the 20th of September the city was won. Slowly pushing onwards, Sir Colin Campbell, the new commander-in-chief, effected the final relief of Lucknow in November. Lastly, Sir Hugh Rose, in the most brilliant

CAWNPORE IN 1857. (*From a contemporary print.*)

operations of the war, cleared Central India of the Ranee of Jhansi and Tantia Topee, Nana Sahib's able but cowardly lieutenant. The last embers of rebellion were stamped out in the early summer of 1859.

India transferred to the Crown.

The East India Company had become an anachronism, and the Derby Ministry, which had succeeded Palmerston's, carried a Bill transferring the government to the Crown. The Company was dissolved, and the Board of Control abolished. In its stead a Secretary of State for India was appointed, with a council to advise him. In India her Majesty's representative was given the rank of Viceroy, with authority over the Provincial Governments, which, however, continued their separate existences. The military forces of the Company were united with the British army. Lord Canning, whose steadfastness during the Mutiny was recognised by his nomination as Viceroy, announced the new order at a durbar held on November 1st, 1858.

Second Derby Ministry

Lord Derby's second Ministry was composed of much the same materials as the first. It existed because the Liberals and Radicals were unable to reconcile their differences. During the remainder of the session of 1858 it passed, in addition to the Bill transferring India to the Crown, a measure admitting Jews to Parliament. Forced to take up reform, Mr. Disraeli introduced next February a Bill which satisfied neither his own party nor the Opposition. Mr. Henley and Mr. Walpole resigned, while Lord John Russell condemned the disfranchisement of the borough freeholders and the non-reduction of the borough qualification, together with certain so-called "fancy franchises" that Mr. Disraeli had invented. Defeated on the second reading by 39, the Government appealed to the country, but the general election left it still in a minority. The Opposition composed its quarrels at Willis's Rooms, and Ministers were beaten by thirteen votes on a resolution of want of confidence moved by Lord Hartington.

Second Palmerston Ministry.

The queen sent for Lord Granville, rather than undertake the "invidious, unwelcome task" of making choice between Lord Palmerston and Lord John Russell. He failed, however, to form a Ministry, and Lord Palmerston assumed the Premiership. Of the former Whigs it contained Lord John Russell as Foreign Secretary, the Duke of Argyll as Lord Privy Seal, and Lord Granville as President of the Council. The Peelites were

represented by Mr. Gladstone as Chancellor of the Exchequer, Mr. Sidney Herbert as Secretary for War, and the Duke of Newcastle as Secretary for the Colonies. Mr. Milner Gibson, a Radical hostage, went to the Board of Trade.

Foreign Affairs: England and France.

There followed a period of Parliamentary repose, but of much disturbance abroad. Lord Malmesbury's well-intentioned but fussy diplomacy had failed to avert the declaration of war by the Emperor of the French against Austria on behalf of Italian unity. The Prime Minister and Lord John Russell were enthusiastic in the cause, and their diplomatic action occasionally overstepped the limits of strict neutrality. They were much disgusted by the Treaty of Villafranca, whereby Napoleon III. abruptly withdrew from obligations that were becoming too heavy for him; and they declined to co-operate in preventing Garibaldi from crossing over the Straits of Messina to Naples. A feeling of rooted suspicion with regard to France came over Lord Palmerston's mind. He met the rapid increase of the French fleet by introducing a Fortifications Bill, which provided for the defences of Portsmouth and Plymouth in 1860, and he encouraged the Volunteer movement (p. 370). However, personal explanations removed his distrust to some extent. The Commercial Treaty negotiated by Mr. Cobden in the same year improved international relations. The two Powers joined, as already mentioned, in chastising the Chinese and in coercing Mexico, until in 1862 Napoleon III. thought fit to enthrone Maximilian of Austria there as a phantom Emperor (1863).

America and Denmark.

Lord John Russell, become Earl Russell, was a rash Foreign Secretary, and his "rich harvest of autumnal indiscretions," as Mr. Disraeli phrased it, brought some loss of popularity on the Government. On the outbreak of the American civil war he steadily refused, indeed, to be dragged by the Emperor of the French into the recognition of the Southern States; he also behaved with dignity and promptitude when Captain Wilkes forcibly took the Confederate envoys, Mason and Slidell, from the British mail steamer *Trent*. But a better understanding with the American Minister, Mr. Adams, would have prevented the departure of the privateer *Alabama* from the dockyard in which she had been built to swoop upon the Northerners' merchantmen, and thereby Earl Russell brought upon his country a heavy reckoning (p. 525). He was hardly more

fortunate in his treatment of European affairs. His remonstrances on behalf of Poland brought upon him the most unmistakable of snubs from Prince Gortschakoff. He went dangerously near promising assistance to the Danes when, on the re-opening of the Schleswig-Holstein question after the death of Frederick VII., they were menaced by the allied forces of Prussia and Austria. When he found that the Emperor of France, disgusted by his refusal to send British representatives to a projected

THE SEIZURE OF THE CONFEDERATE ENVOYS, 1861.
(*Reproduced by permission of the proprietors of the "Illustrated London News."*)

Congress for the revision of the Treaty of Vienna, declined to stir, he had to wriggle out of his undertakings as best he could. It needed all Palmerston's tact to avoid a Government defeat.

Home Politics.

Much to the disgust of the Radicals, the sessions were almost barren of legislation. Lord Westbury, the Lord Chancellor, carried a Bankruptcy Bill, but his legal reforms were cut short by his enforced resignation on a Parliamentary censure of his mode of administering his patronage. Earl Russell was humoured by being allowed to bring in a Reform Bill, but there was no demand for it, and it died in committee. Mr. Gladstone's Budgets, on the other hand, put an abundant revenue to excellent uses, and removed duties without lessening income.

He chafed under the Prime Minister's zeal for the defences and, in 1860, had to put up with the rejection of the Paper Duties Bill by the House of Lords at the instigation of Lord Lyndhurst. The Paper Duties.

DAME COBDEN'S NEW PUPIL.
(*Reproduced by special permission of the proprietors of "Punch."*)

A constitutional quarrel seemed imminent between the two Houses, but the Prime Minister obtained the appointment of a committee, and so allowed passions to cool. There was a truce of parties, barely interrupted by the general election of 1865,

Death of Palmerston.

until, on the 18th of October, Lord Palmerston died in his eighty-second year. Though a strangely Conservative leader of the Liberal party, he represented in his fearlessness and energy the best qualities of the English people. He had been preceded to the grave on December 14th, 1861, by the Prince Consort, who, understood at last by the nation, had lived down the unpopularity under which he laboured at the time of the Crimean war

G. LE M. GRETTON. The Army.

In the spring of 1854 the Government sent a large force of British troops to Eastern Europe to act in concert with the French in the defence of Turkey against a Russian invasion. The expedition consisted of an aggregation of battalions, batteries and cavalry regiments, magnificent in drill and in physique, but wholly unused to working together as integral parts of a great fighting machine. At the beginning of 1854 the numbers of the army had fallen so low that to bring these different corps up to their war strength had been most difficult. In the words of the Secretary-at-War, "The army in the East was created by discounting the future. Every regiment at home, or within reach, and not forming a part of that army, was robbed (of its men) to complete it." Most of the generals were old men who had learnt nothing since the days of the Peninsular War. The staff, "the brain of the army," were no better trained in their profession than the regimental officers, for the Staff College was not founded until 1858. The system of the Commissariat department was not only hopelessly complicated, but inherently vicious; for the officials, whose duty it was to feed the troops and transport the stores, were not under the orders of the head of the army in the field, but of the head of the Treasury in London. For nearly forty years the nation, by its persistent neglect of all military questions, had sown the wind; and in the winter of 1854 the army in the Crimea reaped the whirlwind.

The Crimean War.

In August, 1854, the Cabinets of London and Paris decided to attack Sebastopol, the great Crimean fortress from which Russia threatened the safety of Constantinople; and early in September a noble fleet of men-of-war and transports—600 vessels, guarded by 3,000 guns—reached the Crimea, a part of Russia then almost unknown to the nations of Western Europe.

On the 14th of September the allied army—composed of 25,000 English, 30,000 French, and 7,000 Turks—landed unopposed at Calamita Bay. Here history once more repeated itself. As in Schomberg's descent on Ireland in 1689, so in the invasion of the Crimea more than a century and a half later—our troops were disembarked without the means of moving away from the beach on which they had landed. With great difficulty carts were obtained from the natives, but in wholly insufficient quantities. For a battalion of infantry the proper allowance of transport in the field is five carts and eleven waggons. On the march to Sebastopol, after the battle of the Alma, only about nine carts were available for each division, to carry the baggage, medical stores, tents, and sick and wounded men belonging to the six battalions and two batteries of which each of the divisions was composed. In Bulgaria the Commis-

SEBASTOPOL IN 1854, AFTER W. TELBIN.

sariat had collected, with great trouble and expense, several thousand mules, horses and ponies; but for some departmental reason most of these beasts of burden had been left behind at Varna, although they would have been invaluable on landing in the Crimea

Failure of Supply and Transport.

After the victory of the Alma Lord Raglan, though grievously hampered by want of transport, pushed on to Balaclava, the fishing village which became our base of operations during the war. He encamped on a line of heights, some six or seven miles from the little bay on which Balaclava stands, and at once broke ground against Sebastopol. As the Commissariat could draw no supplies from the enemy's country, everything which the army required had to be brought by sea, landed at Balaclava, and carried up to the troops at the front. As long as the weather continued fine things went fairly well; but when the autumn rains set in the road from the port fell into a wretched condition. No men could be spared from the trenches for road-making; and the expedient of breaking up a wooden merchant ship, and laying down her timbers as a corduroy road, seems to have occurred to no one. Thus the troops on the "Upland" (as the heights were termed by Kinglake), separated from their supplies by an almost impassable slough of miry clay, were gradually reduced to the greatest misery. About the middle of November, when the pressure of actual want was first felt in our camps, there were still 2,000 beasts of burden at Varna. Some of them were brought from time to time to the Crimea, but they were soon worked to death; and in January, 1855, our available transport had dwindled down to less than 350 animals and 120 carts. How utterly inadequate this transport was may be inferred from the fact that twelve months later, with only double the number of men before Sebastopol, 8,000 animals, 200 waggons, 500 carts, a good road and a railway from Balaclava to the front, were found necessary to supply the wants of our besieging army. From the Turkish provinces on the Black Sea our fleets of transports could have brought over numbers of excellent horses, but the Commissariat made no effort to obtain them, because there was no forage in store on which animals could be fed. The officials at home had forgotten to send to the Crimea the 2,000 tons of hay which had been asked for; and the Commis-

Lack of Forage.

THE CAVALRY CHARGE AT BALACLAVA, OCTOBER 25, 1854.

sariat at the seat of war had not the initiative to send ships round to the neighbouring countries to buy up forage. Sooner than face the responsibility of departing from strict official routine, they allowed the pack animals to die like flies from starvation and overwork. The transport virtually ceased to exist, and the cavalry horses perished so fast from want that the efficiency of the mounted branch of the service became seriously impaired.

Overwork of the Troops.

In every siege the strength of the besieging force is of necessity severely taxed. In addition to the ordinary duties of a camp, and of the outpost service against surprise, the troops have to provide labourers for digging in the trenches, and strong covering parties to protect them against the enemy's sorties. But our men were called upon to do far more than this in the Crimea. Owing to the failure of the transport, the soldiers, when not actually on duty before the enemy, were (to use their own expression) "turned into commissariat mules," and constantly struggled down to Balaclava to obtain supplies for the "upland" camps. "I have seen our men," wrote Colonel Colin Campbell of the 46th, "after having come back from the trenches, and having barely time to eat some biscuit and coffee, sent off to Balaclava to bring up rations, warm clothing, blankets, etc. They would return at night after their fourteen-mile tramp through the mud, and throw themselves down on the floors of their tents as if they were dead, so exhausted that even if their dinners had been got ready for them, many of them could not have eaten a morsel. Next morning probably a third of them would be in hospital, and the remainder for the trenches the following evening."

Want of Food and Clothing.

In the early part of the winter the condition of the men was terrible. Insufficiently protected from the weather by leaky tents, they slept in puddles on the bare ground. Though constantly wet through by rain and snow, they were without a change of clothes or boots. Their uniforms were in rags, their boots dropped to pieces in the mud. Their food (when they could get it) consisted of biscuit, rum, and salt beef or pork, the latter the more popular because it could be eaten raw; for until the end of December the Commissariat threw upon the troops the burden of foraging for their own fuel. Even when the men had been successful in their quest for wood their difficulties were

not over, for of the camp kettles served out when the army landed in September, many had been lost or become unserviceable; and to all requisitions for a fresh supply the Commissariat had one stereotyped reply, "None in store." In a winter campaign hot coffee is a necessity of life; and coffee was issued, but unroasted and unground, so that its preparation entailed endless labour upon the men. This extra labour the Commissariat contemplated with equanimity, for as early as February, 1854, when supplies of stores were being discussed, the Commissary-

WINTER IN THE CRIMEA.

(*By permission of the Proprietors of the "Illustrated London News."*)

General had written: "The soldiers will no doubt find some means of overcoming any difficulty that may arise from the want of mills and coffee roasters."

From want of green food scurvy soon broke out, and the doctors began to clamour for vegetables—but in vain. Not only did the Commissariat fail to provide vegetables, but it was so tied and bound by red-tape, that when a ship arrived laden with cabbages, a present for the troops, no departmental official would take the responsibility of giving a receipt to the master of the vessel, who kept the cabbages on board till they became rotten, and then discharged them into the sea. Lime-juice was necessary to keep down the scurvy; but though on December 19th, 1854, **Red Tape.**

there were 600,000 rations in store, it was not until February, 1855, when the disease was rampant throughout the army, that the first issue was made to the troops. There were abundant supplies of cattle within a week's sail of the Crimea; and as the oxen would have been driven from Balaclava to the camps and slaughtered there, no difficulties about land transport could have arisen. "But the Commissariat urged the necessity of having steamers for their transports, which were not always available, forgetful of the fact that the Duke of Wellington fed his troops for months at Torres Vedras on fresh meat brought in sailing ships from the north of Spain."

The Sick.

The sick in the Crimea were even in worse plight than the men who were able to struggle on at duty, for the army was insufficiently supplied with the most necessary medical stores. In October, arrowroot, sago, brandy, essence of beef, and candles to light up the hospital tents were unprocurable. In November, when about a third of the army were suffering from bowel complaints, such drugs as castor oil, opium, or chalk, were reported "not in store." A doctor, in writing about his men in camp, says: "Sick asking for soup and sago, but I have to give them medicine instead. Few of them would have been patients if they had had more clothing, less fatigue, less exposure, and more food." In the hospitals on the "Upland," the sick lay on the bare ground, often in mud, frequently fed on salt beef and biscuit. To save their lives, the doctors hurried them down to Balaclava, to be shipped off to the great hospital which we had established at Scutari, close to Constantinople. As we had no ambulances of our own, we borrowed the French mule litters; but when these were not available, our sick and wounded were hoisted upon the backs of cavalry horses and so transported to Balaclava. There the one hospital held only 400 men, so that the large majority of sick and wounded were laid upon the beach, exposed to all weathers, while awaiting their turn for embarkation in the transports. On board these ships the arrangements were so utterly bad that eight or nine per cent. of the invalids died on the two days' voyage. In the hospital at Scutari, until Miss Nightingale and her sister-workers evolved order out of chaos, the mismanagement was atrocious. One detail will be enough. During the month of November there were about 2,000 patients, of whom a large number were suffering from dysenteric disorders, and

required absolute cleanliness, yet the total number of shirts washed during those thirty days was six. But what could be expected from the Medical Department when its head, the Director-General, had to receive his orders from five different superiors—the Commander-in-Chief, the Secretary of State, the Secretary-at-War, the Master of the Ordnance, and the Board of Ordnance? During the first winter the death-rate was very

Photo: S. A. Payne, Aylesbury.

FLORENCE NIGHTINGALE.

(*The Bust paid for by the Pennies of the Soldiers.*)

heavy; including the hospitals in the Crimea and Scutari, 1,900 men died in December, 3,000 in January, and 2,500 in February. In the camp before Sebastopol, the number of men who fell ill was alarming. In November, out of the 25,000 troops who originally landed, nearly 17,000 were sick; in December nearly 20,000 men were off duty; and in January, 1855, no less than 23,000 men were on the sick list. Though every available man was hurried out from England, our force so dwindled that in January the French had four times as many effectives before

Sebastopol as we could produce. As our reinforcements arrived, they were kept almost incessantly in the trenches, until broken down by fatigue, exposure, frost-bite, and hunger, they too began to fill the hospitals with sick. Throughout this misery, all ranks behaved gallantly; and (to quote Lord Wolseley) the private soldier, on whom the greatest hardships fell, "for the honour of England, met his death without a murmur. He knew that no stars or ribands could by any chance fall to his lot, yet he fought like a hero, and suffered with the steadfastness of a martyr. The history of his devotion to duty, of his determination to maintain at all costs the credit of the British army, is beyond any praise."

The "Times" Correspondent.

Among the non-combatants in the Crimea was William Russell, the special correspondent of the *Times*. His vivid descriptions of the misery around him suddenly revealed to the nation the astounding fact that, while the British navy possessed a command of the sea so absolute that not a Russian man-of-war dare venture out of harbour, the British army, encamped within seven miles of the sea, almost within sight of the masts of the fleet, lay rotting with scurvy and dying with cold and want and hunger. There was a tremendous burst of indignation; and stores of every kind were hurried to the seat of war, in time to save the lives of many brave soldiers who would otherwise have perished. But for many more no human efforts were availing, and forty per cent. of those who served before Sebastopol in the depth of the winter 1854–55 rest on the upland of Balaclava, or in the cemetery of Scutari. Early in 1855 things began to mend. The Commissariat was shaken out of its lethargy; a transport corps was formed; navvies were sent from England to make a railroad to the front; the invalids began to return to duty, and fresh troops continually arrived from England. Of these, many were volunteers from the militia regiments which had been embodied early in the war. Once more the Constitutional Force justified its existence; not only did it contribute some 30,000 officers and men to the army, but it assisted to garrison Malta, Gibraltar, and the Ionian Isles, and thus set free a large number of regular troops for duty before Sebastopol.

The Militia and the War.

By the end of 1855 we had 4,000 cavalry and 45,000 infantry, with 100 field-guns in the Crimea, besides a Turkish contingent of 20,000, officered by Englishmen, and a German contingent of 10,000 men. Two or three months later 18,000 troops were

assembled at Aldershot, ready to embark, if necessary, for the East. But on April 2nd, 1856, peace was proclaimed, and no further reinforcements were required for the Crimea.

Tactics.

Little need be said of our tactics on the Crimean battlefields. At the Alma in two-deep lines we attacked the heavy columns of the Russians, and vanquished them—to their intense surprise, as they did not think it possible for men to be found bold enough to attack in this apparently weak formation. Balaclava was a display of brilliant but misdirected valour. Inkerman, fought in a fog, was essentially a soldiers' battle, in which the rank-and-file by their marvellous courage and steady discipline alone saved the army from annihilation or captivity.

Officers and Men.

In the Peninsula the troops were often grossly neglected by their superiors (Vol. V., p. 721); but in the Crimea officers began to realise that one of their most important duties, in peace or war, is to attend to the food, the clothing, the comfort, and the amusements of their men. The good feeling between all ranks, produced by this constant and watchful care, is one of the most characteristic features of the British army of to-day. A few years before the Crimean war, Napier, the conqueror of Scinde, had startled his contemporaries by mentioning in despatches (almost for the first time in English history) the names of private soldiers who specially distinguished themselves in action; and he thus paved the way for the institution of the Order of the Victoria Cross in 1856, a thoroughly democratic decoration, open to every rank in the army. Before the V.C. was granted, officers who distinguished themselves could aspire to various honours, but soldiers who performed some desperate act of courage were rewarded by a mere dole of money.

The Persian and Chinese Wars.

Only a few months after peace was made with Russia, England found herself again at war. A question respecting the possession of Herat, on the Afghan frontier, involved us in hostilities with Persia, and before our troops had returned, victorious, from the Persian Gulf, troubles had arisen in the Far East. Repeated insults to our flag compelled the Government to demand reparation from the Chinese Emperor. While the expedition was on its way to China, the British Empire was horrified by the mutiny of the native army in Bengal, where the sepoys, suddenly turning their arms against the English officers who had so often led them to victory, murdered many of them,

The Indian Mutiny.

and butchered all the white women and children upon whom they could lay their hands. Happily for Britain the ranks just then were full, as the men who had enlisted during the Russian war were still with the colours. Many militia battalions were again embodied, and, by taking over garrison duty in various places, at once set many thousand soldiers free for active service in India. Strong reinforcements were hurried out to support the handful of white men, who, scattered in feeble garrisons throughout Bengal, with infinite heroism were holding their own against the overwhelming masses of the mutineers—veteran soldiers, who had been drilled and trained and disciplined in the same school as the British troops. In point of the calm and steadfast courage displayed, the campaigns of the Crimea and the Mutiny are alike; but in other respects the contrast was startling. In the Russian war the army was tied hand and foot by red-tape, and any exhibition of intelligence and of initiative was discouraged. In India, on the contrary, soldiers and civilians alike showed themselves full of initiative and of resource, and, above all, were ready to accept responsibility and its consequences.

The Volunteer Movement.

Hardly had the Mutiny been quelled when the attitude of France towards this country became so threatening that the Volunteer force sprang into existence. To this movement the nation owes much. Opinions differ as to the fighting value of men who, after having as recruits attended the regulation sixty lessons in drill, are only compelled to annually appear ten times on parade and to fire twenty shots at a target. But one thing is certain. The Volunteers have largely contributed to dispel the old dread of a standing army, the bugbear of the English people since the Restoration. They have familiarised the electorate with the idea that soldiers are necessary for the very existence of England. They have assisted to popularise the army among the classes from which its recruits are chiefly drawn. Above all, they have taught the practical lesson in patriotism that it is the duty of the citizen to be prepared, in case of need, to fight in defence of his country.

W. LAIRD CLOWES. The Navy.

Soon after the final adoption of the screw in the Navy, and even before the adoption of iron as the material for the hulls of British fighting ships, important improvements in entirely new

directions became necessary. The power of the gun had begun to grow greatly, partly in consequence of the development of shell-fire; and the swift and tragic destruction, by shell-fire almost exclusively, of the Turkish squadron off Sinope by a Russian squadron on November 30th, 1853, demonstrated that the time had come for inventive genius to devise means for the protection of ships and human life from at least some of the effects of the incendiary missiles. The first result was the building, for the purposes of the war with Russia, of armoured

Photo: W. Symonds & Co., Southsea.

H.M.S. *WARRIOR.*

floating batteries. The credit of the invention is due to France; but plans of the vessels were sent to England, and in 1855 this country constructed the four wooden-hulled armoured batteries *Trusty, Thunderer, Glatton,* and *Meteor,* following them up in the succeeding year with the iron-hulled armoured batteries *Thunderbolt, Terror, Ætna,* and *Erebus.* The earlier type was of about 1,540 tons, the later one of about 1,950 tons; and the speed was in the one case 4.5, and the other 5.5 knots. The smaller type carried 14, and the large 16 68-pounder smooth-bore guns, 10 feet long, and weighing 95 cwt. France again led the way by laying down in March, 1855, the sea-going wooden armour-plated frigate *La Gloire,* the prototype of a class of four

Guns *versus* Armour.

sister ships; and Great Britain followed by laying down in 1859 the much larger and more powerful iron-hulled armour-clad *Warrior*. *La Gloire* was 252 feet long, and had a speed of little more than 12 knots. The *Warrior* was 380 feet 2 inches long, and had a speed of 14.3 knots. Each carried 4.5 inches iron armour. But it was presently found that such thin plating was of little or no value against the improved guns which were rapidly coming into use. Guns grew larger than they had ever been before; the rifling of them improved their accuracy, and, by reducing the windage between the projectile and the bore, gave them greater velocity, penetration, and range; the introduction of the various breechloading systems further advanced their powers; the new practice of building up guns, instead of casting or forging them, facilitated the creation of still heavier weapons; and finally the adoption of slower-burning powders allowed the charge to expend its full force in the most advantageous manner before the instant when the projectile quitted the gun. The effect, briefly summarised, of all these and other advances was that, whereas in 1860 the largest gun afloat was just equal to the penetration of 4½ inches of iron at the muzzle, in 1885 the largest gun afloat was fully equal to the penetration of 34 inches of similar armour. The quarter of a century was naturally, therefore, one of continual struggle between gun and armour. In the course of the rivalry, there came a time when the thickness of iron armour needed to withstand a fair blow from the biggest gun of the moment was so great that for a ship to attempt to carry much plating of that weight was hopeless. Accordingly the attention of inventors was directed to the discovery of some process whereby the resisting quality of the plating might be improved, without unduly increasing the weight. This brought about the introduction of compound armour, *i.e.* of iron armour faced with steel; and then, as the gun again forged to the front, of solid steel armour; while, at last, even the solid steel had to have its face further hardened, by special treatment, until it became so intractable as to turn the edges of the best-tempered tools. It is probable that the finest armour existing in 1885 had, thickness for thickness, more than one and a half times the resisting power of the plain iron armour put upon our first sea-going ironclad, the *Warrior*; yet, upon the whole, victory remained with the gun. Armour

could be manufactured to keep out everything that could be thrown against it; but, if made of the needful thickness, so little of it could be carried by any ship of practicable proportions that it would be possible to protect only a very limited area. Keeping in view that armour in action is more advantageously situated than armour on the proving grounds, naval constructors compromised matters. They put exceedingly thick armour over a few vital or otherwise important places; they placed thinner armour on larger but less critical areas; and they left a considerable part of the ship without vertical armour of any sort, trusting to be able to assure the stability of that part by working into the ship's structure a curved steel deck, so arranged that its edges were well below the water-line, while its centre was above it. The theory was that a projectile striking a part thus protected would, if it encountered the curved surface, be deflected upwards, instead of passing right through the ship near or below the water-line, and that any water admitted above the still intact steel deck could be easily controlled by means of the pumps. The protective deck, as this device was called, was also employed in vessels which had no vertical armour whatsoever; but towards the end of our period the introduction of the quick-firing gun lent a renewed importance to vertical armour, even if comparatively thin; and in 1885 a tendency was visible—first abroad, and then in England—to revert to the practice exemplified in most of the earliest ironclads, of armouring vertically as great an extent of a fighting ship's side as could be armoured, not so much in order to prevent penetration by the few heavy projectiles as to cause the raining shells from the quick-firing guns to burst outside the vessel. But the carrying-out of these principles had then barely begun.

W. H. HUTTON. The Church.

From 1846 the Tractarian movement was no longer most definitely connected with Oxford. Some of its leaders had left the University, one had left the English Church; Pusey, though he continued till the end of his long life to reside nearly the whole year in Oxford and to teach as an University Professor had an influence which extended far and wide over England while Keble, from the quiet country parsonage of Hursley exercised a power hardly less great.

"The Guardian."

Among the earliest signs that the movement had taken root outside the place of its origin was the foundation of *The Guardian* newspaper in January, 1846. This was the work of Oxford men who were in general sympathy with the Tractarians: the chief of them were Frederic Rogers (afterwards Lord Blachford) and R. W. Church (afterwards Dean of St. Paul's). The aim of those who founded it was to represent the principles of orthodox Anglicanism, not only in theology but in politics and criticism. The paper soon worked its way to success and became the most popular "organ" of the English clergy. Through it the opinions of the careful, accurate students who sympathised with the movement became widely known. Through it began the influence of Church, whose knowledge and wisdom and strength came gradually to impress profoundly the most prominent of his contemporaries among statesmen as well as clergy. As parish priest and as Dean of St. Paul's he displayed the character of an English priest of the type of George Herbert or Lancelot Andrewes—learned, judicious, tolerant, saintly—in its most beautiful aspect. Firm in his convictions, filled with a noble enthusiasm for justice, and great in his quietness, no man ever represented more perfectly the characteristic excellencies of the Anglican Church.

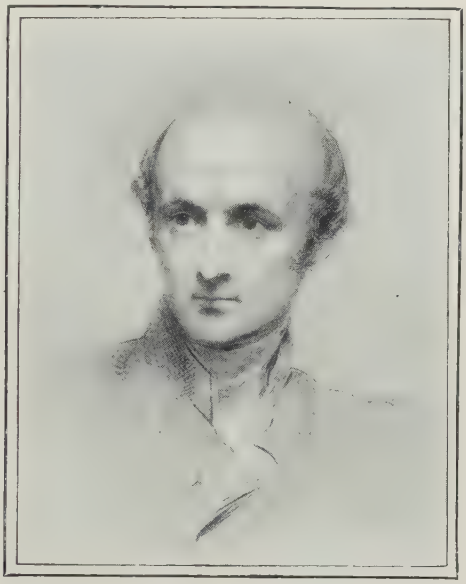
The Gorham Case.

From 1847 to 1851 the Church was agitated by a controversy on the doctrine of Baptismal regeneration as asserted in the Book of Common Prayer. In 1850 the Judicial Committee of the Privy Council, while declaring that it had no jurisdiction or authority to decide matters of faith, ruled that the doctrine held by a certain Mr. Gorham, and declared heretical by the Bishop of Exeter—the learned and combative Henry Phillpotts (1778–1869)—should be no bar to his institution to a benefice in that bishop's diocese. Phillpotts was a Tractarian before the Tractarians, a man of extraordinary polemic vigour and a ruler of indomitable determination and masterfulness, and he fought the battle, as he deemed it, of orthodoxy till the end. The decision of the lay court was regarded by many as a grievous scandal. It resulted eventually in the secession of several English clergymen to the Church of Rome, among them the learned Archdeacon Wilberforce, brother of the Bishop of Oxford, and his brother-in-law, Archdeacon Manning.

Manning had been an active supporter of the Tractarians,

had adopted a violent animosity against Rome, in which he could not induce Pusey to join, and, eventually, after years of doubt and hesitation, passed, when he had become more and more suspected by English statesmen and cut off from preferment, into the Roman communion. Secessions to Rome.

While this controversy harmed the Church in one direction it was indirectly a source of benefit. It made Churchmen see



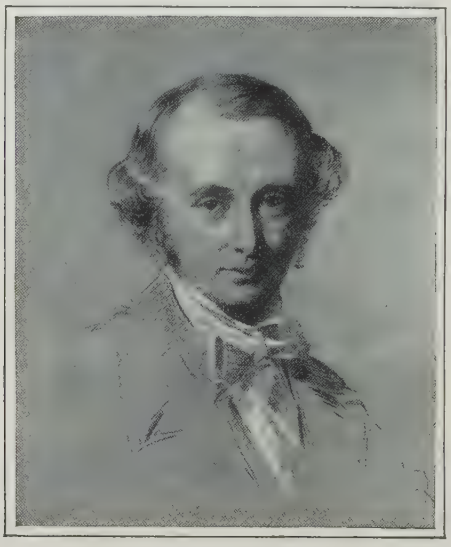
ARCHDEACON, AFTERWARDS CARDINAL, MANNING.
(After G. Richmond, R.A.)

the absolute necessity for some definite expression of Church life, and it thus greatly aided the revival of Convocation and the restoration of its powers, warmly advocated by Bishop Wilberforce and Bishop Phillpotts.

Meanwhile a new school (of which more will be said hereafter) was rising. It represented on the one hand those who distrusted all formularies and valued comprehension rather than cohesion in the Church, on the other those whose studies of German theology had led them to proceed far beyond most Englishmen of their day in the direction of criticism of the Bible and of Church principles. In 1860 a volume of "Essays The Broad Church.

Essays and Reviews.

and Reviews" was published. It was the work of several writers who were in not a few matters in far from close agreement with each other, but who wished to see a more liberal interpretation of the Church's formularies and a fuller appreciation of the results of modern investigation, scientific and historical. Among them were men so unlike each other in opinion and in tone of mind as Mark Pattison, a learned but somewhat crabbed scholar who had undergone a violent



BENJAMIN JOWETT, BY GEORGE RICHMOND, R.A.
(*Balliol College, Oxford.*)

reaction from Tractarianism, Benjamin Jowett, a shrewd and kindly teacher of young men, and Frederick Temple, a strong schoolmaster and a sincere and devoted Churchman of moderate views. While Pattison and Jowett remained in Oxford to the end of their lives, the latter exercising a remarkably wide influence outside through the men of mark whom he had trained, Temple, in spite of much opposition which gradually yielded to the force of his personality and his goodness, rose to be Bishop of Exeter, and then of London, and eventually (in 1896) Archbishop of Canterbury. "Essays and Reviews" took what were considered in 1860 to be very wide and unorthodox

views of important theological questions. It caused great excitement, was condemned by bishops, answered by an archbishop, and forgotten. The long discussion to which it gave rise served only, in the end, to show the breadth of the English Church. The Broad Church, or Latitudinarian, School flourished in spite of the persecution of some of its members It afforded a resting place to those who had neither time nor inclination to study deep theological or philosophical questions,

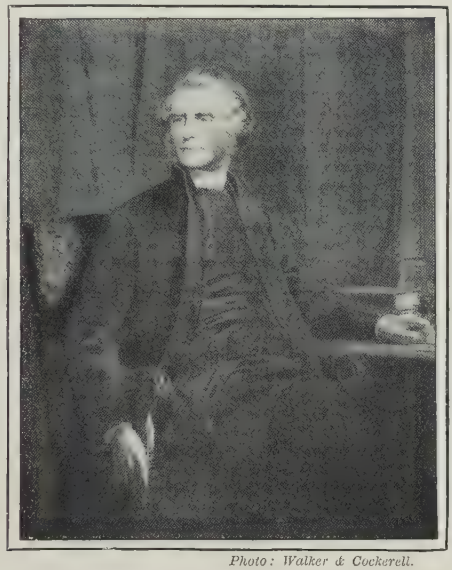


Photo: Walker & Cockerell.

BISHOP COLENSO, BY SAMUEL SIDLEY.

(*National Portrait Gallery.*)

or whose charity abhorred the restraints of definition. Above all, in practical philanthropy on an "unsectarian" footing, and in warm welcome of the democratic movement of the age, it filled an important place in the history of the time.

As the Tractarian school lost its weaker disciples by secessions to Rome, so the Latitudinarians, though for obvious reasons less readily, lost several members who became Unitarians. The strength of this sect was due to a number of powerful minds which directed it, and not least to the eminent philosopher and devout philanthropist, James Martineau.

Bishop Colenso.

The storm raised by "Essays and Reviews" was felt outside England. It was complicated by a serious trouble in the Church of South Africa, where Bishop Colenso, of Natal, well known as a mathematician and as a friend of the native races, but of whom Disraeli said that his theological studies had begun "after he grasped the crozier," was excommunicated for persistence in opinions in regard to the Bible which were adjudged heretical by the Bishop of Cape Town, whose action was approved by the Convocation of Canterbury.

Church Courts.

While questions such as these profoundly agitated the Church there was grave discontent with the unsatisfactory and unconstitutional position of ecclesiastical judicature. The Convocations were allowed to sit again from 1850, and did extremely valuable work; but from 1833 the powers of the Court of Delegates, which had enjoyed the appellate jurisdictions in ecclesiastical cases since the Reformation, were in the hands of the Judicial Committee of the Privy Council, a lay court which was in several respects unfit, even if competent, to try such cases as were now being brought before it. The Church, it seemed, was allowed to speak for herself, though she was not often listened to, but her laws must be interpreted by laymen. The position was sure to lead to acute difficulties.

H. D. TRAILL. Literature.

For the first ten years of the period on which we are now entering, the poetic stage was not only dominated but almost exclusively filled by the great figure of Alfred Tennyson. Though he was now verging upon forty, and had long since acquired and displayed the highest mastery of his artistic instrument, yet his recognised eminence in the world of letters was not yet equalled, or nearly equalled, by his popularity in the larger world outside. Had his career been cut short at that date his place as a poet of the first rank would have been secure to him in the history of English literature; but he would not have gone down to posterity as pre-eminently the national poet of the Victorian Age. For though perfection of form can be no less, perhaps even more, commandingly brought home to the critical appreciation in short than in long poems, it is only on the larger scale of composition that the matter of great poetry ever impresses itself on the mind of that vast majority of man-

Tennyson's Second Period.

kind to whom poetic form is an indifferent, if not an unintelligible, thing. In 1846, Tennyson had written no single poem of more than a few hundred lines in length. Between that year and 1858 he had published four volumes, each containing a separate and substantive poem, three out of the four numbering several thousand lines, and two of them containing some of the poet's most serious, most deeply-felt, and for the mass of his countrymen, therefore, his most memorable work.

These four are "The Princess" (1847), "In Memoriam" (1850), "Maud" (1854), and "The Idylls of the King" (1858). The first, a work of pure fantasy, so far as regards the plot of the "Medley," to use its author's name for it, but with a thread of now somewhat outworn social satire interwoven with its romantic fable, is hardly to be ranked as a whole among the strongest of Tennyson's performances. He is never, indeed, at his best in poetry of the lighter order. "Alfred, whatever he may think, cannot trifle," said his friend Fitzgerald of him; and there was a certain amount of truth, which "The Princess" illustrates, in the criticism. The poem nevertheless abounds in descriptive passages of exquisite beauty, and is starred with lyrics which the poet has nowhere excelled. "Maud" divided opinion even more, and, perhaps, even more justly. Its tone is somewhat jarring; its hero, always unsympathetic, at times almost declines into a mere sulky lout; and although it contains at least one unsurpassed utterance of passion, the passage beginning: "I have led her home, my love, my only friend," a lyric which would alone rank its singer among the great love poets of the world, the poem as a whole must be admitted to contain a larger alloy of rhetoric to a smaller amount of the pure gold of poetry than any other equal number of Tennysonian lines. It was with "In Memoriam" and "The Idylls of the King," that the Laureate (for in the year of the publication of the former of these poems he succeeded Wordsworth in that dignity) touched his highest point of achievement during this period of his career. Too long for an elegy—nay, too long, perhaps, for artistic perfection, if considered as a single continuous poem—"In Memoriam" abounds with detached passages of the finest poetry, giving final and monumental expression to some of the deepest emotions of the universal human heart. And modernised though they are from the Arthurian Epic,

"The Idylls of the King" combine a noble elevation of feeling and a splendid movement of romantic narrative with such a mastery of the blank verse measure as had been unknown to English poetry since the days of Milton.

The Brownings.

Browning, not yet established in popularity, though strengthening the foundation of his future fame by work so admirable as "Christmas Eve and Easter Day" (1850), "Men and Women"

Photo: Walker & Cockerell.

ROBERT BROWNING, BY FIELD TALFOURD.

(*National Portrait Gallery.*)

(1855), and "Dramatis Personæ" (1864), was probably in those years known by name to far fewer people than was his future wife, Miss Elizabeth Barrett (1809–61), who had published a volume of "Poems" in the first year of this period, and another in 1850, containing most of her best work. Two years later appeared "Casa Guidi Windows," and the longest and most ambitious of her works, "Aurora Leigh." It was not till eight years later, in 1860, the year preceding her death, that she published "Poems before Congress"; and a volume of "Last Poems" appeared posthumously in 1862. The poetesses of the world form a company so small that the retrospective eye is

hardly arrested till it reaches the shadowy and fragmentary Sappho; and to vote a niche to Elizabeth Barrett Browning in so nearly empty a temple may seem but a doubtful honour. Moreover, her admirers need not fear, nor her severest critics demur to, a comparison of her poetry with that of all but one or two of her masculine contemporaries. The technical defects of her verse are numerous and occasionally flagrant, and her literary

Photo: Walker & Cockerell.

ELIZABETH BARRETT BROWNING, BY FIELD TALFOURD.
(*National Portrait Gallery.*)

taste was far from irreproachable; but she had a passionate sense of beauty in all its forms, and she sounds at her best moments a note of thrilling and poignant pathos which not many poets of her own or any time have matched.

Matthew Arnold.

In the year 1849 there appeared a volume of verse, entitled "A Strayed Reveller, and Other Poems," and signed only by an initial letter, which contained the first fruits of a poetic genius of the rarest quality, if somewhat limited in range, and all too brief in the period of its productive activity. It was followed four years later by a volume of "Poems" from the same hand, and this time disclosing its author's full name, which, if it did not at

once secure, has together with later productions secured him in the estimation of capable critics a unique place among poets of the Victorian Era. It may be said, indeed, that in Matthew Arnold (1822–88) we have, perhaps, the most perfect specimen of the classic style that the essentially Romantic bent of nineteenth-century English poetry could allow to exist and flourish

MATTHEW ARNOLD, BY G. F. WATTS, R.A.

(*National Portrait Gallery, by permission of Mr. F. Hollyer.*)

in our literature. It is a style which, as its judicious admirers admit, has, in modern hands at any rate, its weakness as well as its strength; and in the hands of Mr. Arnold the former quality was now and then more conspicuous than the latter. It betrayed him sometimes into a stiffness with which another and greater classic, Milton, is himself on occasion justly chargeable, and sometimes into a frigidity of which Milton is much more rarely guilty. But when, as in "Thyrsis," the noble memorial poem to his friend Arthur Hugh Clough (1819–61)—himself a writer of considerable but unequal poetic merit, to whom this brief refer-

ence must suffice—the younger elegist is at his best, there is an austere and melancholy beauty in his strain of lament which raises it very nearly to the level of the elder poet's "Lycidas." The classic chill, however, is even more noticeable than the classic correctness in Arnold's "Merope" (1858), an English drama in the manner of Greek tragedy, and its failure is the more conspicuous because it preceded by only a few years the less accurately Attic, but far more brilliant effort in the same order of imitative poetry, the "Atalanta in Calydon" of Mr. Swinburne.

Pre-Raphaelitism.

It would be premature, however, to examine the work of this last-mentioned poet, the originator and inspirer of a new spirit into English poetry, until due account has been taken of a movement by which he himself was no doubt in some measure affected, but which was more directly represented by another and somewhat earlier singer. The formation of the Pre-Raphaelite Brotherhood, related (p. 408) in more detail in another section of this chapter, had in the first instance an artistic rather than a literary origin. It was in art, at any rate, that it first found noticeable expression. But the most striking feature in the movement—its passionate medievalism of spirit—was very soon to assume the same prominence in literature. There is little doubt, for instance, that though Tennyson was never directly affiliated with the Pre-Raphaelite School, it was the influence of their ideas "in the air" that turned his attention to the Arthurian Epic. But it was far more potently the inspiration of William Morris's (1834–96) "Defence of Guinevere," a poem which is saturated with the spirit of Malory's prose epic, and showed plainly that, in the work to which the elder poet had only gone for the original of a "Christian hero" and a body of texts for high discourses on the masculine virtues, his young successor had found a whole congenial world of life and movement, action and passion, colour and pageant—all, as picturesque and poetic as could be wished, but as completely dissociated from the domestic virtues of the nineteenth century as could be conceived. Nor can the inspiring effect of the movement upon the genius of Mr. Swinburne and so upon the whole poetic tendency of the generation which he has so powerfully influenced, be overlooked. The second, and, perhaps, the most famous of this poet's works, the "Poems and Ballads," was,

William Morris.

A. C. Swinburne.

however, published in 1866, a year after the close of this period, and our brief survey of his important relation to the poetry of the second half of the century may most conveniently be deferred to the next chapter, wherein also the work of Dante Gabriel Rossetti, a no less truly begotten son of the movement than William Morris, may be concurrently reviewed.

"Owen Meredith."

Among the minor poets of the period the foremost name, perhaps, is that of "Owen Meredith," the pseudonym under which Edward Robert Lytton (1831–91), only son of the novelist and poet Edward Lytton Bulwer, whose work was noticed in the preceding chapter, gave his first poems to the world. His later performances did not quite fulfil the promise of his youth; but he had a true though intermittent lyrical inspiration, and some of his efforts in half-serious allegory and symbolism show a remarkable mastery of that peculiar form. It remains only to give a few words of notice to a curious and deservedly fleeting movement originating with a small school of young poets appropriately designated by the word "Spasmodic." The joint founders of this school—for in the difficulty of distinguishing between leader and follower they rather resemble the Adullamite party in Mr. Bright's memorable description of them—were Alexander Smith (1830–67) and Sydney Dobell (1824–74). The latter, though he probably had more of the "root" of the poetic matter in him than his colleague, failed to achieve any great popularity; but the former, for a few years after the publication of his most important poem, "A Life Drama," became the rage. There are periods in the history of all the arts when the public seems to tire for a while of its old and well-established favourites, and to seek perversely enough for some one to supplant them; and during the interval between "Maud" and "Idylls of the King," Alexander Smith stood in much the same relation to Tennyson as "Master" Betty stood at an earlier date to John Kemble. He was the "young Roscius" of poetry, who, after being temporarily elevated to the same, if not to a higher pedestal, than that of its greatest living master, is now as clean forgotten as his dramatic prototype. It would be unjust to compare him, except as the object of exaggerated admiration, with the school of Della Crusca (Vol. V., p. 600); but a comparison of Gifford with William Edmonstoune Aytoun (1813–65) is more apt. For the "Baviad" and "Mæviad" were not more fatal to

The "Spasmodic" School.

1865]

the Della Cruscans than was the admirably humorous burlesque of "Firmilian" to the Spasmodic school. Alexander Smith's pretensions to poetic merit were, however, immeasurably superior to those of another favourite, whose popularity was far more enduring, and whose permanent hold upon a large public of readers renders it expedient to defer the works of

Photo: Walker & Cockerell.

GEORGE GROTE, BY T. STEWARDSON.

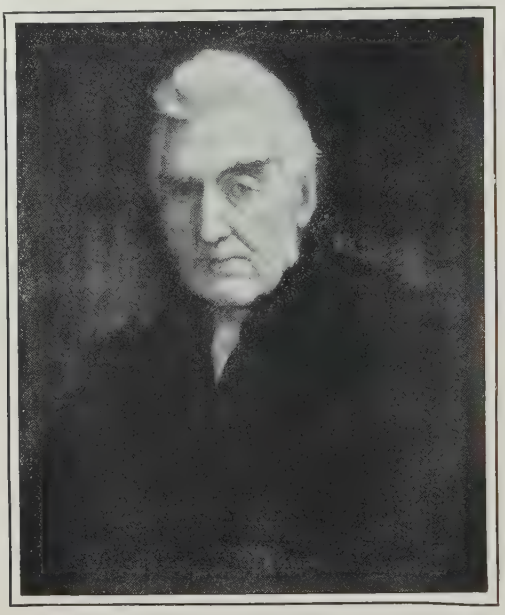
(*National Portrait Gallery.*)

Martin Farquhar Tupper (1810–89) for consideration in that general review of the literature and literary tendencies of the age which is reserved for the closing chapter of the present volume.

Prose: Historians.

In poetry, as has been seen, the period, though one of fruitful activity, was at the same time to some extent also a period of transition and tentative effort. For the rich and steady development of English literature upon established lines we must look to the department of history. The quarter of a century from 1840 to 1865 was singularly distinguished in the production or commencement of memorable historical works and the foundation or coronation of edifices of historical fame.

Macaulay's magnificent fragment of a history of England belongs, as noticed in the preceding chapter (p. 216), to the period; and to it belongs also the completion of what is still the best history of Greece, by Bishop Thirlwall (1797–1875), a writer of much learning, no mean literary skill, and strong liberal prepossessions controlled by an admirably judicial mind; and the rival work on the same subject by George Grote (1794–1871), which, though



HENRY HART MILMAN, BY G. F. WATTS, R.A.
(*National Portrait Gallery.*)

wanting alike in the style and the scholarship of Thirlwall's history, and too often declining in its political disquisitions to the level of a mere Radical pamphlet, yet by the animation and graphic power of its narrative deserved at least some measure of the popularity which it obtained (p. 663). In 1856 H. H. Milman (1791–1868; afterwards Dean of St. Paul's), a disciple, imitator, and editor of Gibbon, published the "History of Latin Christianity," the worthiest of his works; and in the same year appeared the first volume of that history of England, from the "Fall of Wolsey to the Defeat of the Armada," which, when

completed in 1869, was to establish the position of James Anthony Froude (1818–94) as one of the greatest prose writers of the Victorian Age. And, lastly, it was in the middle of this period that Carlyle entered upon that herculean labour which was to engage, and indeed for all practical purposes to exhaust, the energies of his latter years, the "Life of Frederick the Great."

Passing from historic to imaginative prose, we find no abate-

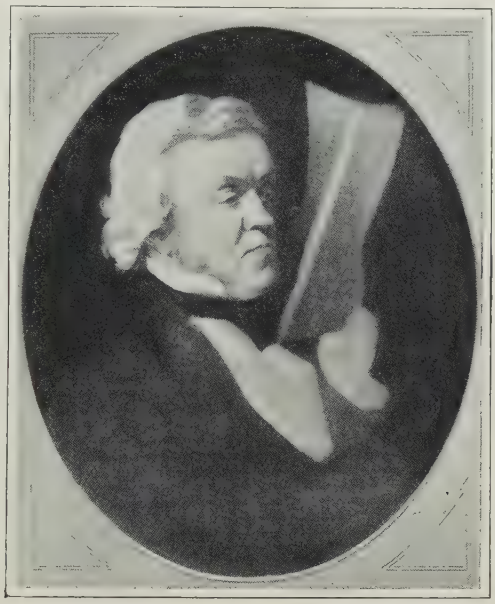


Photo: Walker & Cockerell.

W. M. THACKERAY, BY SAMUEL LAURENCE.

(*National Portrait Gallery.*)

ment of the brilliancy of achievement which signalised this remarkable period of the mid-century in every department of literature. Between 1846 and 1865 there flourished no fewer than seven novelists, of whom two, Dickens and Thackeray, rank as undisputed classics; two others, Charlotte Brontë and George Eliot, have in the opinion of many established their claim to that title; while the remaining three, Charles Reade, Charles Kingsley, and Mrs. Gaskell, without exactly attaining classic rank, undoubtedly achieved a nearer approach thereto than was to be accomplished by any later English novelist for

Novelists.

Thackeray. well-nigh another generation. But the eleven years from 1846 to 1857 are principally famous as the flowering time of Thackeray's genius. The first year of the period witnessed the commencement of his masterpiece, "Vanity Fair"; in the last he began "The Virginians," a tale of the eighteenth century, which would stand higher among his works were it not thrown into the shade by "Esmond," the wonderful novel published a few years earlier, of which it is the sequel, and in which Thackeray, with an imaginative power never surpassed even by Scott, and with an accuracy of historic detail of which Scott was too often careless, has reproduced for us the statesmen and soldiers, the wits and beaux, the poets and pamphleteers of the reign of Anne. And when we remember that "Esmond" was only two years preceded by "Pendennis," and followed within three years by "The Newcomes," we must admit that never, save once before by his great rival, has the literature of English fiction received so rich an addition to its treasures within so short a space of time. With the single exception of "David Copperfield," published in the same year as "Pendennis," the greatest of Dickens's novels had already been given to the world; for "Dombey and Son," "Bleak House," "Little Dorrit," and the rest, though they of course show many traces of his mature power, show also no less visible signs of the waning of the spontaneous, and the waxing of the mechanical and mannered element in the novelist's work; while Thackeray's genius during these years was going from strength to strength. He did not, it is true, nor could he from the very nature of his subjects and their treatment, achieve so wide a popularity as Dickens. His appeal was mainly, if not quite exclusively, to the refined and educated class of readers; and it was among their interests and occupations that he sought the material of his art. He has left the field of the stronger and more primitive passions, the *votum, timor, ira*[1] of humanity, to others; and it is from the *voluptas, gaudia, discursus*—the pleasures, ambitions, pursuits of society, with the activities they stimulate, the weaknesses they foster, and the virtues which occasionally redeem them, that he collected the *farrago* of his books. But among these he moves a supreme and unapproachable master; the possessor of a far more limited domain than Dickens, but traversing it

[1 *i.e.* the passions of desire, fear, anger. The reference is to Juvenal I., 85.]

with a far surer foot and surveying it with a far more penetrating eye.

In the second year of our period an unknown writer published under the pseudonym of Currer Bell the remarkable novel "Jane Eyre," which at once excited the surprised admiration of the critical world. It was followed in 1849 by

The Brontës.

CHARLOTTE BRONTË.
(*After George Richmond, R.A.*)

"Shirley," and in 1852 by "Villette." When the secret of their authorship was revealed they were found to be the work of Charlotte Brontë (1816–55), the eldest of the three daughters of a Yorkshire clergyman, all of whom, though none of them lived to attain the age of forty, made themselves a name in literature; the second sister, Emily (1818-48), displaying in "Wuthering Heights" an amount of power which might perhaps, if she had lived, have carried her even further than Charlotte. As it is, however, her elder sister's remains the greater name, though the far less striking character of her

second and third efforts, as compared with her first, suggests the reflection that, brief as was her life, its brevity may not have ill-served her reputation. "Jane Eyre" is after all but a glorified example of the "one novel" which everybody is said to "have in him." It is not quite certain that Charlotte Brontë had any more novels in her as great, or nearly as great, as "Jane Eyre;" at any rate neither "Villette" nor "Shirley" has proved it. But this suspected limitation in her range may not unreasonably be claimed by her admirers as additional testimony to that truth, force, and intensity of this personal and almost autobiographic utterance which has raised it to the rank of a classic. Even as it is, however, she owes something of her fame to the pious labours of her friend and biographer, Mrs. Gaskell (1810-65), herself, as has been said, a novelist who came not far short of greatness, and whose "Sylvia's Lovers," a finer work than her more famous novel of "Mary Barton," is one of the most powerful and moving stories in the whole literature of English fiction.

Mrs. Gaskell.

George Eliot.

A far more widely ranging imagination, coupled with a broader and more philosophic view of life than Miss Brontë's and relieved by a wealth of more genial humour than the somewhat acrid satire of Currer Bell, distinguished the genius of Marian Evans (1819-80), who under the literary sobriquet of George Eliot wrote her first and perhaps most famous novel, "Adam Bede." Its remarkable excellence was so immediately and so generally recognised that at least one ambitious admirer of it paid the authoress the most sincerely flattering tribute within his power to render by claiming her work as his own. It was followed two years later by "The Mill on the Floss," a novel of almost equal beauty and power, and in yet another year by the brief but admirable little idyll of "Silas Marner," in an artistic sense, perhaps, her finest work. "Felix Holt" was a less happy effort, and "Romola," a story of the Italian Renaissance, was, like George Eliot's poetry, an exercise on an instrument over which she had not the perfect mastery that she had elsewhere displayed. "Middlemarch," published in 1871, showed her once more at her best; but from that date the influence of her long association with George Henry Lewes (1817–78), a man of immense intellectual versatility as dramatist, journalist, critic, biologist, and popular historian of philosophy,

G. H. Lewes.

began to show itself in a disastrous substitution of the scientific or pseudo-scientific for the poetic and artistic view of human life, and in a correspondent and consequent depravation of one of the purest and most distinguished of later prose styles. Partly on this account, and partly through mere change of

GEORGE ELIOT, BY SIR FREDERICK W. BURTON, R.H.A.
(*National Portrait Gallery. By permission of Henry Burton, Esq.*)

fashion, the fame of George Eliot has undergone obscuration, amounting almost to occultation, since her death; but the eclipse is almost certainly only temporary. A novelist of great imaginative gifts, and a not inconsiderable poet, not only attained popularity, but even the high respect of criticism during this period in the person of Charles Kingsley (1819–75), a position approached, but not quite reached by his brother Henry (1830–76), a writer of distinctly lower literary merit, but of no little force and fascination as a story-teller, especially of Australian life. Neither of them, however, deserved the fame

The Kingsleys.

Charles Reade.

which should have been, but never was, awarded to Charles Reade, a romancer of true genius, whose "The Cloister and the Hearth" was by far the most inspired revival of a bygone European period accomplished since Scott. During most of the years when Reade's supremacy might and should have been recognised the first place in popularity was given to Anthony Trollope, a writer whose great vogue, as being one of the characteristic phenomena of the century, is reserved for examination in our concluding chapter.

THE TINTED VENUS, BY JOHN GIBSON, R.A.

F. G. STEPHENS Artists of the Middle Victorian Era.

At the date with which this part of our narrative begins painting of the more ambitious sort, as it was practised in these islands, was, apart from a considerable improvement as to its technique, and except as regards landscapes, very much as it had existed when Reynolds left it more than half a century before. In the interval Turner (whose life-work belongs to an earlier period), Constable, and Bonington (pp. 49, 53, 67) had, indeed, revolutionised landscape art, not only in England but in France, where the influence of the second of these masters was so prodigious that the superb and resourceful school of that country as it still exists is due to him. As concerns subject- or figure-painting, as well as landscapes, to Bonington all the world was, and still is, very much indebted. His great contemporaries, Delacroix and Delaroche, had in him an invaluable ally, who, being a worthy follower of the Magnificoes of Venetian design, helped with them to refound the inaptly named "Romantic School." What is called anecdotic painting, and the representation of

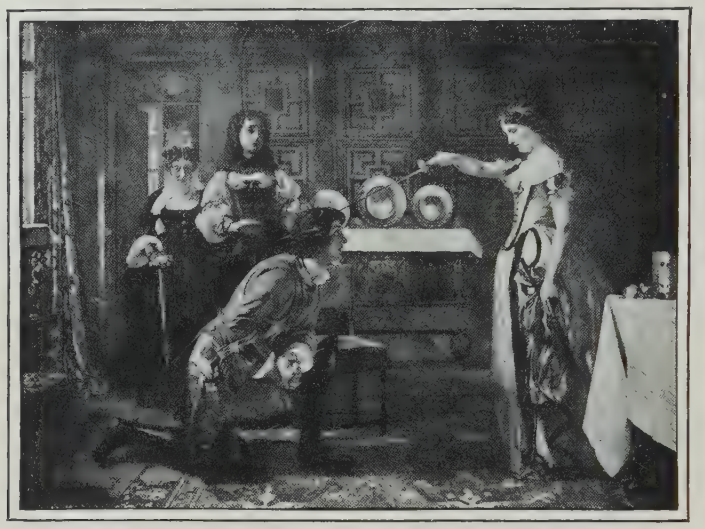
historical themes, came into vogue in the light of these modern leaders. The glorious mark of Flaxman was deeply set upon English sculpture; Chantrey, who died in 1842, was still potent in the same line; the influence of Gibson was indirect and losing force. Our best sculptor was Richard James Wyatt, whose "Penelope," "A Huntress," and "Ino," a Greek might boast of,

BACCHANTE AND CHILD, BY R. J. WYATT.

if, like Wyatt, he had lived and died in the Eternal City. The representation of beauty, and the divine tranquillity of the Hellenic mood, not the illustration of anecdotes, and still less of passion, were desiderata of the art of Gibson, Wyatt, M. L. Watson—whose "Sarpedon," "Eldon and Stowell," and "Chaucer" endure any comparisons—McDowell and Woolner. These were the masters of the period now to be considered. Woolner, in 1846, had not yet made himself known. The architects of the day were the accomplished Cockerell, the

Art in 1846.

masculine Hardwick the elder, the passionate and learned younger Pugin, and the first Barry. The engravers proper were John Pye, C. Turner, S. Cousins, and J. T. Willmore. Lithography and etching were hardly flourishing. There was not much to say about wood-engraving; "processes" were nowhere; and miniature painting was in a good way, chiefly in the hands of those capital workmen, Ross and Thorburn.



THE KNIGHTING OF HENRY ESMOND, BY A. L. EGG, R.A.
(*National Gallery of British Art.*)

Painting.

As it is to painting that this essay must needs principally refer, it will be well to see how it stood in the hands of the above-named leaders. It will be remembered that the stupendous powers of Millais and Ruskin had yet to emerge, that Haydon had already, so to say, discounted himself, and that Wilkie, most of whose Spanish pictures were disastrous, was recently dead, although the effect of his success as a painter of anecdotic genre was encouraging to those who worked in the same vein of design. Mulready (p. 64) had become rather an object of admiration than a model for imitation. Leslie (p. 64), the ablest and best designer of genre, the subtlest delineator of beauty of the modern strain and what may be called Englishness then living, had twenty years before won high honours with

MALVOLIO AFFECTING THE COUNT, BY DANIEL MACLISE, R.A.
(National Gallery of British Art.)

"Sancho Panza in the Apartment of the Duchess," "The Dinner at Page's House," and a few other gems which careless observers have not half enough admired. G. S. Newton, with some of the powers of Bonington, his model, and a weaker grasp of character, colour, and drawing than Leslie, died in 1833. Augustus Leopold Egg stood very high among the genre painters, and in 1844 had advanced his reputation by exhibiting "A Scene from *Le Diable Boiteux*," which is now in the Vernon Gallery; his masterpieces —"The Knighting of Henry Esmond," which occupies a space between a very good Leslie on the one hand, and, on the other, a true Pre-Raphaelite picture, and "Peter the Great and Catherine" —were yet to come. Among the second-rate men of the decade preceding 1845 stood Callcott, an excellent, though rather tame, artist in landscape as well as in genre painting; Collins, whose art had a sort of freshness we cannot discover in Callcott's; and the vigorous and unequal John Varley, Mulready's and William Hunt's master. Their fellow-pupil, John Linnell (p. 57), still flourished grandly, and was, perhaps at his best. John Martin (p. 60)—whose influence upon Poole and F. Danby, both masters of poetically inspired landscape art, was greater, or at least more durable, in that respect than in his own case—died mad in 1854; and his "Zadak in Search of the Water of Oblivion" remained as the finest illustration of a manner which it is not just to call merely scenic.

Etty (p. 68), now in his fifty-eighth year, and soon to pass away, was a master whose sterling originality and sumptuous colouring will, it is to be hoped, again win honours for him when the historical mood of later judgments no longer vitiates the public taste. Maclise (p. 231) had more than justified the hopes built on his "Malvolio affecting the Count," now in the National Gallery. He had, before 1845, produced "Captain Rock," "The Banquet Scene in *Macbeth*," and "The Play Scene in *Hamlet*." Dyce's scholarship, stringent science, and bright, pure colouring, in addition to his fine draughtsmanship, were holding their places in the Academy and elsewhere; he had taken high honours in that famous Westminster Hall Exhibition of 1843 which astonished the world, and with C. W. Cope as his equal and colleague, was already an A.R.A. Stanfield (p. 232) was at his best. In water-colour painting, artists' knowledge of light and splendid colours had been prodigiously advanced by Turner

and a few others; among its professors the most original and powerful were David Cox (p. 71), J. F. Lewis, and William Hunt. Each of these men painted from nature as he found it, studiously, unflinchingly as to labour, and with such brilliant hues and such wealth and force of light as no Englishman had till then ventured upon; accordingly the little gallery of the old Water Colour Society was fairly illuminated by their works. In his

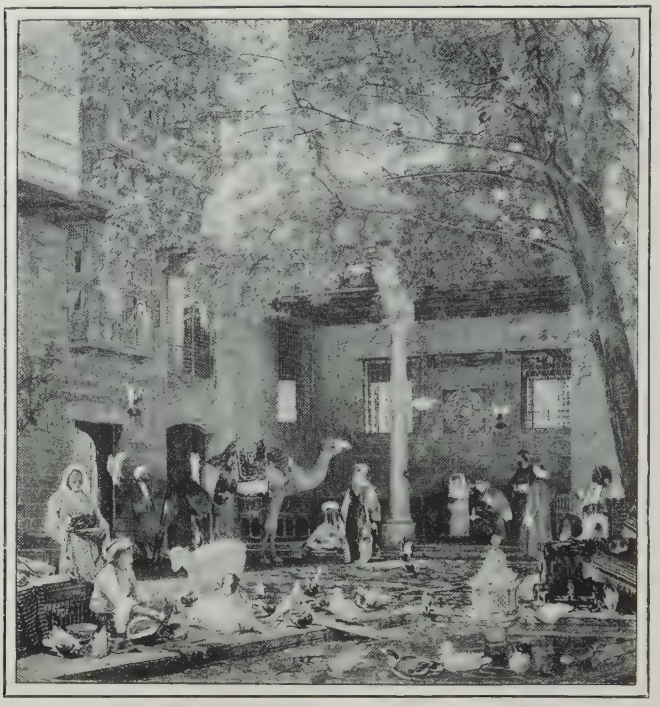
THE CURFEW BELL, BY SAMUEL PALMER.
(*Victoria and Albert Museum.*)

way their compeer was Samuel Palmer, whose grave inspiration and noble and stately powers were dominant in 1845.

Anticipations of Pre-Raphaelitism.

It is not without a purpose that these sumptuous colourists, searching draughtsmen, and indefatigable students of nature are here grouped. In these respects their achievements were not only honourable to the artists, but they rendered the advent of the Pre-Raphaelites—that greatest phenomenon of the period here contemplated—a somewhat less startling affair than it must otherwise have been. In fact, Etty's painting of the carnations, and his skill in depicting what the Italians call the *morbidezza* of "the life," were a great deal higher in key, purer and truer than the British public had before his time any knowledge of. Maclise's firm touch, his dignified, if some-

what histrionic, motives and laborious modelling were almost Pre-Raphaelite; the same may be repeated of the research of Dyce and his brilliancy, to say nothing of the profound earnestness of his mood, as all these qualities were manifest in "Joash Shooting the Arrow of Deliverance," which was at Trafalgar



THE COURTYARD OF THE COPTIC PATRIARCH'S HOUSE IN CAIRO, BY J. F. LEWIS, R.A.
(*National Gallery of British Art.*)

Square in 1844, and is a picture the best Pre-Raphaelite Brother would be proud to own. Cope, at the period in question, exercised an unusual sense of style which all the "Brethren," if they did not imitate it, enjoyed greatly. The naturalism, the splendour, and the completeness of Cox, Lewis, and William Hunt, combined with their inexhaustible patience and fidelity, went far to support the theory of Pre-Raphaelitism; while the largeness of the style of the last named "great master in small,"

was such as the "Brethren" one and all could never praise too highly. In fact, Hunt was as much a Pre-Raphaelite as any artist of his time and training, his powers, and his idiosyncrasies could be expected to become; while it is easy, when characteristic

THE MONK, BY WILLIAM HENRY HUNT.
(*Victoria and Albert Museum.*)

Lewises, Coxes and Hunts are compared with the early works of the Brotherhood, to see how very much they all possess in common and how closely they resemble each other.

Before considering Pre-Raphaelitism at length we must take an account of that series of exhibitions which, designed not less

Art in Westminster Hall.

to promote fine art than to prepare for the decoration of the new Houses of Parliament, was held at Westminster Hall in 1843, 1844, 1845, and 1847. Cartoons, *i.e.* large drawings in chalk, intended to show the poetic and dramatic inspirations of the authors as well as to attest their technical attainments, had been called for, so that half the ambitious artists in England were on the *qui vive*, and their utmost energies developing. The result of the competition was surprisingly great, and the merits of a large number of the works sent in were incontestable. Out of

1843

the medley which, in 1843, ensued, Fame continues to refer to the contributions of E. Armitage, G. F. Watts, C. W. Cope, and H. J. Townsend, which showed not only hitherto unknown powers of designing figures on a large scale, but quite unexpected veins of poetry and energy. It was evident that, whatever our Continental neighbours might think, England was not, as to art of the higher kind, sunk in chaotic darkness. There were present, too, it must be owned, not a few marvels of badness. The surprise which attended the exhibition of these pieces arose from their affirming the designers' powers in drawing life-size figures, which is very different from delineating them on smaller scales, and was till then but rarely practised in England. Next to the acquisition of the Elgin Marbles (p. 666), no artistic event was more important than this gathering of exercises in the higher ranges of art. Possession and study of these treasures of the Parthenon have been incalculably beneficial to English art in all its forms, because in them we have standards nobler than were known before; and in the opinion of the present writer the result has been so truly commensurate to their merit that not even the foundation of the National Gallery is of so great importance.

Having named the more eminent contributors to Westminster Hall in 1843, it will suffice to say that all these artists, and the majority of those whose names follow here, aimed at succeeding in respect to style. This, since Romney's and Reynolds's deaths, had not obtained the attention which is due to so precious an element of art, an element so important that to their neglect of it may be attributed, first, some of the troubles which beset the Pre-Raphaelites, and, secondly, the large measures of success which attended their art when, in a more advanced stage, they freely used power of this nature.

The second exhibition in Westminster Hall was held in 1844, 1814.
and consisted largely of paintings in fresco and oil, as well as cartoons and sculptures; it showed how much had been gained by the efforts of the preceding year. Among the leading examples were a cartoon of "Ophelia," an encaustic painting and a fresco by E. Armitage, the powerful painter of "Aholibah," who survived until May, 1896; C. W. Cope's fresco of the

THE BODY OF HAROLD BROUGHT TO THE CONQUEROR, BY F. MADOX BROWN.
(*A Cartoon: South London Art Gallery.*)

"Meeting of Jacob and Rachel," a fine piece lovers of art ought not to forget; a cartoon by J. Cross, whose "Death of Richard Cœur de Lion," now in the House of Lords, is a masterpiece too long overlooked, if not forgotten; Maclise's fresco of "The Knight," a work showing the metal the painter was made of; a graceful fresco of "Love," by Egg, and three extremely masculine works by F. Madox Brown, among them being the cartoon of "The Body of Harold brought to the Conqueror," a numerous composition of life-size figures, the transcendent merits

of which led to its being bought by public subscription and given to the South London Gallery, where, being perhaps the sole relic of the exhibition of 1844, it now hangs honoured and conspicuous. There were no premiums on this occasion.

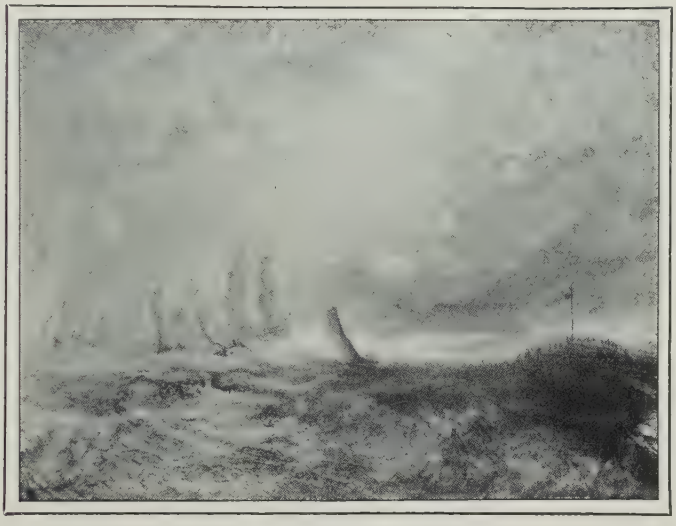
The Academy, 1845.

Before the next gathering at Westminster was complete the Academy of the year 1845 had contained Etty's voluptuous and beautiful "Aurora and Zephyr," Mulready's fine "Sketch," Stanfield's "Sawmill at Saardam," Turner's "Whalers" (two), his lovely paradisical day-dream, "Venice, Evening: Going to the Ball," which is now, alas, a faded wreck, and its companion, "Morning: Returning from the Ball," pictures whose contrasting effects illustrated the artist's joy in nature and his knowledge of the enchantments of light and colour. With these were "Venice: Noon," by the same, and his "Venice: Sunset." Here was a magical quartet in landscape-painting such as no artist has surpassed. Leslie's "Scene from Molière" and "The Heiress"; F. Danby's "Wood Nymph's Hymn to the Rising Sun"; E. M. Ward's "Lord Chesterfield's Ante-room," now in the Tate Gallery; Webster's "A Dame School;" Hook's "Song of the Olden Time," and Haydon's gigantic "Uriel and Satan"—these of more than a thousand paintings are all that remain in the critic's memory. They suffice, however, to show that England was by no means in a state of dire artistic poverty, and that her output in design was as various as it was fine. Westminster Hall in 1845 still further illustrated the power, progress, and growing resources of the English School; but beyond that, presented nothing further than its forerunners had called forth. Its noteworthy pieces were Maclise's "Spirit of Chivalry," Armitage's "Spirit of Religion," both since reproduced in the Houses of Parliament; Dyce's "Baptism of Ethelbert," of which the same may be said; Sir J. Tenniel's "Allegory of Justice," and F. Madox Brown's picture of the same theme.

Art in 1846.

The artistic phenomena of 1846—a year which is memorable because it witnessed the simultaneous *débuts* of painters not less important than Sir John Millais, Mr. Holman Hunt, and Mr. Alfred William Hunt—were works by many of the heroes of the previous season. There was no exhibition at Westminster, and the best things at the Academy were Maclise's "Ordeal by Touch," a fine instance, though conceived in his character-

istically "stilted" mood; Etty's "Grape-gatherers" and "Comus"; Turner's "Angel in the Sun," "Returning from the Ball." and "Going to the Ball"; Landseer's "Stag at Bay," "Time of War," and "Time of Peace"; Cope's pathetic and pleasing "A Young Mother"; Mulready's "Choosing the Wedding Gown," a picture now in the National Gallery, and by some considered his masterpiece, which, too, being sold for the then amazing price of a thousand guineas, serves to mark



THE WHALERS, BY J. M. W. TURNER, R.A.
(*National Gallery.*)

another aspect of the matter in hand than that which has previously been looked at here; the "Desdemona" of Sir John Gilbert, Elmore's "Fainting of Hero," Stanfield's "Monnikendam," Dyce's Peruginesque "Madonna and Child," F. Danby's "Sunrise," Egg's "Buckingham Rebuffed," and E. M. Ward's "Disgrace of Clarendon," were the finer productions of 1846, so far as the more important public exhibitions were concerned. It is true that the British Institution of that year contained Turner's "Queen Mab's Cave," two landscapes by Linnell, and three minor works by Etty; but as these examples do not materially affect the summary here presented, it is not necessary to offer further particulars anent the artistic output of the

years immediately preceding the revolutionary movements of the Pre-Raphaelites.

Art in 1847.

The final exhibition in Westminster Hall was held in 1847, and it resulted in the thorough establishment of the honours of several of our painters, whose skill was great, their genius potent, and their aims loftier than the average. Omitting the before-mentioned John Cross—who passed away not long after his "Death of Richard Cœur de Lion" obtained for him a premium of £500—it must be admitted that the gathering which brought into full light the powers of G. F. Watts, P. F. Poole, and E. Armitage (who were all prize-winners at the time) was indeed an epoch-marking one. Mr. Watts contributed a beautiful painted poem, in the chaste, sweet and yet severe, nude life-size figure of "Echo"; while his "Alfred inciting the Saxons to repel the Danes" was laureated. Armitage's "Battle of Meeanee" confirmed the opinions which were due to his honours already won in Paris and London. Mr. J. C. Horsley's "Henry Prince of Wales assuming his Father's Crown," a capital picture of its class, was shown at this time and place. William Linton exhibited his very "classical" "Ancient Greece" and "Pæstum," and Millais sent that (for a boy, as he was then) truly wonderful "Widow's Mite," which was his first important effort. This group of well-designed and skilfully painted life-size figures was painted when the late P.R.A. was barely nineteen; some time afterwards the canvas was cut in half, of which one part remains in Europe, the other was taken to the United States. Foley's "Hampden," now in St. Stephen's Hall, was the most important sculpture. The other contributors comprised Sir W. Allan, Mr. T. S. Cooper, Mr. Eyre Crowe, Henry Dawson, a very capable landscape-painter whom Nottingham continues to boast about; Sir J. N. Paton, Mr. F. R. Pickersgill, H. O'Neil, Mr. W. E. T. Dobson, and Mr. J. Sant. An important outcome of the Westminster Hall Exhibition was a number of commissions given by her Majesty to some of our best artists, including Dyce, Landseer, Etty, Maclise, Leslie, Stanfield, and others, whom she employed to paint frescoes at Osborne and in the Garden Pavilion of Buckingham Palace. These works are supplementary to the more numerous and ambitious mural pictures at Westminster. The year 1847 at the Academy is memorable as having contained Millais's first serious

HONEYWOOD INTRODUCING THE BAILIFFS AS HIS FRIENDS, BY W. P. FRITH, R.A.
(*Victoria and Albert Museum.*)

effort, "Elgiva," the last of his pre-Pre-Raphaelite pictures, which was badly hung on high and in the half-darkness of the Octagon Room, and besides works whose distinctions have been already recalled to the reader's memory, several capital examples by John Linnell, whose "The Mill" is noteworthy as a good instance of his "middle manner," masculine, well-composed, and vigorously painted. It has been engraved. With this were Webster's "Village Choir," now the property of the nation; Etty's large "Joan of Arc" (two paintings), Mulready's "Burchell and Sophia," Egg's "Wooing of Katherina," Elmore's "Invention of the Stocking-Loom," engraved; Frith's "English Merry-making," and E. M. Ward's "South Sea Bubble," which is now in Trafalgar Square.

Masters of Early Victorian Art.

The reader who is familiar with our public galleries, or with those private collections which the owners generously throw open, will from the above statements easily form opinions of the art of half a century ago. He will remember the technical skill, insight into character, and somewhat commonplace humour of Mulready; the weaker geniality and rather "poor" manner of Webster; the sterling accomplishments, vigour, and affectations of Maclise (who had not then decorated the Royal Gallery at Westminster); the splendid exuberance of Etty, the finest flesh-painter of his time in England; least of all will such a reader forget the keen-edged humour, the satiric wit, freshness, and rare sense of the beauty of English women which distinguished Leslie's delightful illustrations of Shakespeare's and Goldsmith's comedies. Such observers as we address know how noble a landscape-painter was John Linnell; how admirable an *animalier*, as the French say, was Landseer; while painters will never omit to admire the triumph of Sir Edwin's handling and that brush-power of his, which was really an art, and not, as with the professors of *chic*, a mere handicraft. Mr. Frith's laborious though seemingly facile dexterity, his sparkling colours, his firm touch, and that sort of humour of his which is sure to be popular, are not to be overlooked, although in 1848 this R.A. had not reached the zenith of his world in painting "The Derby Day," or "Margate Sands." The art of Stanfield was not subtle, but it was sound, while its inspiration was sincere; he, too, had not yet painted his only pathetic sea-piece, which shows the catastrophe of "The Abandoned," a wrecked ship reeling in a

furious sea. The greater merits of Watts, Armitage, Poole, Madox Brown, Hook, J. F. Lewis, and some other later stars, were hardly known in 1847–48; Danby, E. M. Ward, Turner, W. Hunt, and one or two more had done, or were still doing, their best; while, on the whole, the state of art was anything but so

A SCENE ON THE TUMMEL, PERTHSHIRE, BY THOMAS CRESWICK, R.A.
(*Victoria and Albert Museum.*)

ignominious as too rash sciolists have accustomed themselves to pretend to think and to aver to those who know nothing about the matter. Such was the stage on which, or rather such the company of leading painters among whom a courageous and self-reliant body of tyros, inspired by lofty aims and a very intense enthusiam, were about to take parts of a quite novel sort, and, for

a time at least, carry everything before them. The weaker performers on the artistic stage, the Lees, Creswicks, Witheringtons, Howards, Robertses, Shees, Uwins, Westalls, and their like, are not mentioned here because most of them were simply the "walking gentlemen" of the profession, or mechanics of a showy sort; but several of these worthies, including Creswick, had "very pretty notions," and did not deserve the sneers and contumely hasty "modern" critics lavish upon them.

The Pre-Raphaelites.

The first glimpse the public had of Pre-Raphaelitism was, in the spring of 1849, obtained at the Hyde Park Gallery, and by means of Rossetti's "Girlhood of Mary, Virgin," a picture which attracted a great deal of attention, and not a little judicious praise, from the better-informed critics, while the "ruffians of the Press" were not sufficiently stirred by its novelty, nor by their taste, poetic feeling, or training able to appreciate its noble qualities. It was quite otherwise when the Academy opened in May, and unbelievers stood aghast and furious before Millais's "Isabella," the same which is now at Liverpool, and Mr. Holman Hunt's "Vow of Rienzi," both of which were in very honourable places. Then burst forth a chorus of censure such as London had never heard before. These pictures and their contumelious reception were due to a movement which, in the *London Review* of February 22, 1862, was thus described by the present writer as "A Confession of the Pre-Raphaelite Faith":—

"In the Royal Academy, where Millais had been an universal favourite, prophecies had been rife as to his professional success; however, all predictions and this applause referred to a very different order of merit than that which has since become peculiar to its possessor. About the year 1848 the propriety, or, as they declared, the absolute necessity, of the movement so well known as that of the Pre-Raphaelites was ardently discussed amongst the members of the youthful band which shortly afterwards banded themselves together as the 'P.R.B.' The Pre-Raphaelite Brotherhood declared that the system then most popular of producing art out of art itself alone, and, so to say, breeding in and in all mental efforts and practical execution, was not only entirely contrary to the practice of the truly great Old Masters—in proof of which they adduced the system of study followed by Leonardo, Titian, and a host of others—but that in this province of mental activity the same thing which experience has shown to hold good in physical laws would, and even did, they said, operate in annihilating individuality, the absorption of all true love of nature in conventionality, and in contaminating the stream of art at its very fountain-head

. . . [and would] produce a school of painters each generation of whom would be more effete, because more conventionalised, than that which preceded it, and to whose experience alone they looked for guidance. . . . Declaring that the followers of Raphael had ruined the art simply because they were followers of Raphael . . . . and reflecting, not without bitterness, upon the later practice of

AN ETCHING IN THE "GERM," BY W. HOLMAN HUNT.

the Prince of Painters, the P-R.B., with characteristic audacity, and with a seriousness which was half veiled in the fantastic assumption of the society's title, determined that their own works should show a different motive in art, and that they themselves, with all the powers and skill that were in them, would, whatever the consequences might be, pursue a practice widely removed from that of those whom they and all the world about them had been taught to respect or to imitate. Half in fun, the Brotherhood called itself 'Pre-Raphaelite,' adopting that title rather to express a full measure of admiration for the *motive* which guided the great painters preceding

Raphael than intending it to be understood, as critics of a dozen years ago [*i.e.* before 1862] received it, as chosen in approbation of the oftentimes fantastic, more often ascetic, and almost invariably imperfect systems of execution to which the undeveloped powers of the early Italian artists so cruelly limited their achievements on panels and convent walls. Considering how small were the attainments of the art critics of 1848, it is not surprising that they fell into this absurdity. Few of these men knew enough of the art they abused the public mind about to be able to recognise the real state of the case; still less could they comprehend the true qualities which shine through the most *bizarre* failures of execution, most of them due to over-earnestness and a devout desire to do right, which beset the ancient artists they ridiculed. Indulgence for youth of their own day, an enlightened and far-seeing regard of the importance of that which lay behind the most audacious declarations of the Brotherhood, were not to be expected from such men. A few only saw that something might come out of an idea so boldly enunciated, and, notwithstanding the vivid colours of its ridiculous side, sufficiently well expressed to have merited a gentler consideration than it received.'

When it is remembered that Millais was a Gold Medallist of the Royal Academy, and Mr. Hunt one of that institution's most robust and ardent students, it is difficult not to wonder why their technical accomplishments did not win the respect of the critics. At a somewhat later date, one of the Brotherhood thus, as repeated in the *Athenæum* (Aug. 15, 1896, p. 232), briefly wrote the apologia of his comrades:—

"Pre-Raphaelitism was neither more nor less than a protest of sincerity against the fatuousness of conventional art which ruled before its inception. It owed absolutely nothing but the example of sincerity to foreign or ancient artists of any kind; it illustrated that sincerity with greater devotion than any preceding mode of design, and produced nothing which is in the slightest degree like what had gone before it. Nor did the works and technical motives of the Brethren in any respect not controlled by this great rule of sincerity bear the least resemblance to each other. The effect of Pre-Raphaelitism on the practice of its professors was magical and revolutionary."

Such were the principles armed with which no less a person than Sir John Millais—who died President of the Royal Academy, and is universally acknowledged to be the greatest English painter of the Victorian Age—first appeared in the artistic arena. In the same way Dante Gabriel Rossetti, the world-renowned painter-poet, was bold enough to present himself. Thus Millais's fellow-martyr, Mr. Holman Hunt, was fain to come forth. Under the banner of Pre-Raphaelitism

Millais painted "A Huguenot," "Ophelia," "The Order of Release," and "The Proscribed Royalist." As the author of these splendid achievements the P.R.A. to be was, in 1853, elected an A.R.A. The list of Mr. Hunt's works is a record of primitive Pre-Raphaelitism but slightly modified by a larger experience. In Rossetti's "Ecce Ancilla Domini," which is now

"ECCE ANCILLA DOMINI," BY DANTE GABRIEL ROSSETTI.
(*National Gallery of British Art.*)

in the National Gallery of British Art, and half a dozen more fine things, is evidence of how strongly as well as stringently he adhered to those much misunderstood principles which another of the Brotherhood has set forth in the above-quoted terms.

Widening of Pre-Raphaelitism.

In a few years, of course, the stringency of the painters' enthusiasm being relaxed, and their views growing larger and wider—their public, too, having now been partly educated by them—such works as "The Vale of Rest," The Parable of the Sweeper," "Stella" and "Vanessa," "Chill October," "Mr. Hook,"

and a score more equally fine subject pictures, landscapes, and portraits came from Millais's easel. Of these it is right to say that they are, after all, as he was wont to declare on his own account, greatly due to Pre-Raphaelitism "writ large," and used with all the force and fire of the master's stupendous powers. Mr. Hunt has not "written himself" in so large and splendid a fashion, but he is still a faithful and important prophet. Nor were these Brethren the only two who, by pen and pencil, have been "faithful found."

It is not desirable or, within the space here available, possible to enumerate all the pictures of the category in question, which, according to the then new avatar, exercised so prodigious an influence upon English art that to this day its effect is every year visible on the Academy walls. It is not to be thought that only to Millais, Rossetti, and Holman Hunt is due the creation of such qualities as the best modern English pictures excel in; for example, grasp of the subjects selected, which includes vigour and freshness in design, brilliance of illumination, splendour, wealth and harmony of colouring, style in drawing, research in matters of costume, and care in delineating whatever is desirable for delineation. The noble works of Sir John Gilbert, Maclise, Hook, Dyce, John Phillip, J. F. Lewis, and others already named in this connection, attest that, within their time, our national school was already rich enough in these respects, although the number of men possessed of the qualities in question was comparatively limited, and even the best of them were not so thoroughgoing and enthusiastic as Millais, Rossetti, or Holman Hunt. It will be remembered, too, that a leading canon of the Pre-Raphaelite Brotherhood compelled its confessors to paint in the open air and as faithfully as they could; this, of course, ensured the extreme brilliancy of the local colours in their pictures, and consequent vividness in their coloration, or colour-schemes at large. Such qualities as these were not to be secured without finish of the highest kind and the almost complete evenness of the surfaces of the paintings. Lumps of opaque pigments, each casting its shadow and taking a sparkling light, obtained in pre-Pre-Raphaelite works, but would never do where choiceness, brilliance, and pure tints were indispensable.

While the then better-known members of the Brotherhood

THE VALE OF REST, BY SIR J. E. MILLAIS, BART., P.R.A.

(National Gallery of British Art.)

developed form, from the scholastic psychology revived by Reid, is that it seeks to explain the phenomena of the mind by reducing them to cases of a single scientific principle, instead of being content to describe them as manifestations of so many "faculties" corresponding to the general names in ordinary use; compound images, for example, being described as expressions of the imaginative faculty, acts of reasoning as expressions of the faculty of judgment, and so forth. In philosophy proper, as distinguished from psychology, James Mill began to apply the principle of association to explain those beliefs which the Common Sense school regarded as "necessary truths," because incapable of resolution into anything simpler. These in his view, as developed by his son, became products of "inseparable association." Their formation is explained by the principle that some ideas are through frequency and strength of association so closely combined that they cannot be separated. Thus, although we cannot have one idea without the other, we can distinguish them in the complex product, and, by assuming them as elements, can explain the origin of that product.

James Mill's Political Science.

James Mill's most celebrated contribution to political theory is the article on "Government" contributed to the fifth edition of the "Encyclopædia Britannica." This was reprinted with other articles in 1828, and was the object of Macaulay's well-known attack. The "Fragment on Mackintosh" (1835) is a hostile criticism of Sir James Mackintosh's "Dissertation on the Progress of Ethical Philosophy," and is at the same time a defence of utilitarian ethics. The political theory of the article on "Government" will be referred to again when we come to John Stuart Mill. First, however, something must be said of the thinker who was the chief representative of the rival mode of philosophising.

Sir William Hamilton.

Sir William Hamilton (1788–1856) classed himself as of the Scottish school, but had also come under German influence, especially that of Kant. His essay on "The Philosophy of the Conditioned," which was contributed to the *Edinburgh Review* (1829) and is in form a criticism of Cousin, gave him at once a European reputation. His contributions to the *Edinburgh Review* were reprinted with large additions in the "Discussions on Philosophy" (1852). His well-known edition of Reid, with an unfinished series of dissertations on Reid's philosophy,

appeared in 1846; in 1854–5 he brought out nine volumes of a new edition of Stewart's works. Four volumes of "Lectures on Metaphysics and Logic" appeared posthumously ("Metaphysics," 2 vols., 1858; "Logic," 2 vols., 1860; edited by Mansel and Veitch).

Hamilton was remarkable for his copious philosophical learning; and many of his abundant ideas have been actively influential in the thought of the age. His most famous doctrines are those of "Consciousness" and of "the Conditioned." The doctrine of Consciousness is the form he gives to Reid's doctrine of Common Sense. The primary data of consciousness, when we have once arrived at them, are to be accepted as true. Among these primary data is belief in the existence of an external world independent of consciousness. Hamilton accordingly is a realist as against modern idealism. His metaphysical doctrine expresses itself in the "philosophy of the Conditioned." Of the "Unconditioned," whether called the Infinite, which is the "unconditionally unlimited," or the Absolute, which is the "unconditionally limited," we have no positive conception. We must speak of it, if at all, in negations. Between the two contradictory extremes we are unable to choose, though compelled to believe that one of them is actual. Thus all that we can, in the proper sense, be said to know lies in the intermediate region of the "conditionally limited," or the Conditioned. In both regions alike is manifested the law of the relativity of human knowledge.

John Stuart Mill (1806–73), the eldest son of James Mill, was trained by his father in the principles of his own philosophy; this training being the last stage of an elaborate education carried on from the earliest possible period. He was thus introduced to the writings of Thomas Brown, of Hartley, and of Hobbes, as well as to those of the Common Sense school. Later he came under the influence of Comte. Though he much resembles Hume in his general type of thinking, critics who have gone into the question are of opinion that he was very little influenced by Hume's writings, and perhaps did not know some of his most striking philosophical work. John Stuart Mill.

Mill's special greatness is in logic and in political philosophy. In logic he took up the philosophical problem of induction where Bacon left it. He himself had been carefully trained by

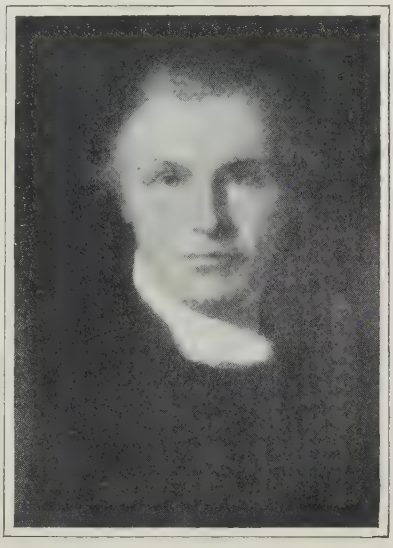
The Logic of Science.

his father in the traditional Aristotelian logic. Archbishop Whately's treatise (1826), which was an expression of the revived interest in logical studies, was the subject of an article by him in the *Westminster Review* (1828), where the germs of some of his later ideas have been detected. The most important part of Mill's logical theory, however, is not in any new interpretation of formal logic, but in the reduction of scientific thought to definite rules. His immediate predecessors in this were Sir John Herschel ("Discourse on the Study of Natural Philosophy," 1831), and Whewell ("History of the Inductive Sciences," 1837; "Philosophy of the Inductive Sciences," 1840). Whewell, in the "History," provided Mill with much of his material. So far as theory is concerned, it cannot be said that either Herschel or Whewell makes any very great step in the philosophical treatment of inductive logic. Both recognise the importance of Bacon's view, that induction must be methodical, not "by simple enumeration." Herschel illustrates Bacon's suggestions towards method from his own wide knowledge of actual science. Whewell in one point really corrects Bacon and, by anticipation, Mill also, when he concedes a larger share to hypothesis in scientific discovery. Mill's problem, however, was not to point out the way to scientific discovery, but to give a statement of the forms of proof by which we may know when scientific laws have been rightly inferred. It was the strictly logical, not what is sometimes called the "methodological," problem. What was almost or altogether wanting in Bacon was a philosophical basis for scientific induction.[1] The philosophical basis was supplied by Mill.

In this part of his work Mill's precursors were Hume and Comte. By Hume, as has been said, he was probably little influenced; but Hume had preceded him in the philosophical analysis of causation. Where Hume came short was in not systematically connecting this analysis with Bacon's idea of methodical induction as the means of establishing laws of

[1] Nothing can be vaguer than Bacon's doctrine of "forms." His predecessor Telesio comes nearer to an affirmation of the "uniformity of nature." See a passage quoted in Professor Fowler's Introduction to the "Novum Organum," 2nd edition, p. 95: "Sensum videlicet nos, et naturam, aliud praeterea nihil sequuti sumus, quae, perpetuo sibi ipsi concors, idem semper et eodem agit modo, atque idem semper operatur."

nature. Hume was apparently most interested in applying his idea with a sceptical turn against the older notion of cause as an intelligible relation understood prior to experience. Comte, like Bacon, falls short in philosophical analysis; but he makes an advance on Hume by affirming more definitely that laws of nature, when we know all about them that we need to know scientifically, are simply statements of what uniformly occurs. The sceptical element in Hume's view recedes into the background, while its "positive" element is brought forward. Mill's work was to connect the philosophical analysis of "law" and "cause" with that idea of induction as proceeding through successively higher stages of generality which is due to Bacon. Through the advance of positive science that had taken place in the interval he was able to formulate better than Bacon the canons of scientific inquiry, while deriving them, as Bacon did not, from a fundamental axiom—namely, the uniformity of nature, especially as expressed in the "law of causation." As to the grounds on which this axiom itself is to be affirmed when we go into philosophical inquiries beyond those that are specially logical, Mill's view may or may not be accepted; but the necessity for such an axiom at the base of scientific induction is irrefragable. Mill's work in the logic of scientific inquiry into matter of fact is thus almost exactly comparable with Aristotle's in formal logic. After two centuries or more of dialectical thought, Aristotle explicitly stated the law of contradiction, and made it implicitly the basis of the syllogism. By his successors this law, with its equivalents—the laws of "identity" and of



WILLIAM WHEWELL, D.D.
(*Trinity College, Cambridge.*)

"excluded middle"—was laid down for didactic purposes as the fundamental law of all consistent thinking. Similarly, after more than two centuries of systematic experimentalising, Mill stated the fundamental axiom or postulate of scientific logic in such a way that, by means of it, he was able to formulate and reduce to order the "canons of induction" corresponding to the methods of experimental inquiry actually used by men of science.

Mill's Influence.

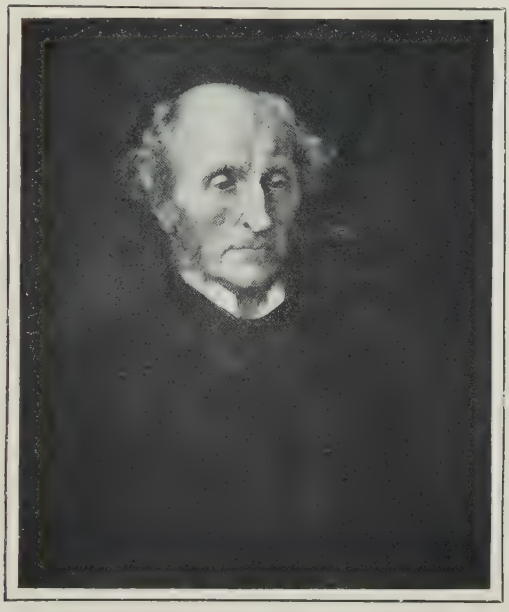
Mill's "System of Logic, Ratiocinative and Inductive: Being a Connected View of the Principles of Evidence and the Methods of Scientific Investigation," appeared in 1843. From about this time may be dated his great influence on English thought. This influence was exercised in many different departments of philosophy; but the department in which, besides logic, Mill left most permanent effect, is political philosophy. The "Logic" and the "Essay on Liberty" were those of his works which he himself expected to last longest. A summary of his general political thinking is to be found in Book VI. of the "Logic" itself. Here, with the aid of principles derived from Comte, he makes a distinct advance on the political doctrine of his father, to which we must now return.

Mill's Political Philosophy.

In one fundamental point he follows his father's method. Both alike hold that politics, in the most general sense, is an "art." As such it has a practical end. From a knowledge of the relations between social causes and effects, we have to discover the means of attaining the end. This is the proper place of theory. We are not to provide ourselves at starting with universal precepts, and deduce from these the particular precepts applicable to each case; as is implied in the doctrine of "natural rights." In England, it may be noted, the books having most affinity with this last doctrine are Paine's "Rights of Man" (1791) and Godwin's "Political Justice" (1794). Bentham (Vol. V., p. 563) repudiated it; and it has not in the present century found expression in effective English thought.

The point where J. S. Mill makes his great advance is in the method prescribed for determining those theoretical propositions on which politics as a practical art—so far as it is not purely empirical—depends. James Mill employs what has been called by his son the "geometrical" method. He lays down certain psychological laws derived from experience of men as individuals,

and from these deduces propositions about the conduct of men collectively which are held to be true for all political societies. These theoretical propositions being established, and the public good, defined in the utilitarian sense, being laid down as the end, it is then possible, he holds, to deduce the conditions of good government. According to J. S. Mill, this method is too



JOHN STUART MILL, BY G. F. WATTS, R.A.
(*National Portrait Gallery; by permission of Mr. F. Hollyer.*)

"abstract." Even in Political Economy, which only informs us of certain "tendencies" that would be completely realised if men were moved by one class of motives and by no others, we have to employ a more complex kind of method than this "geometrical" procedure, viz. the "physical" or "concrete deductive" method, which takes account of varying conditions. And the science of society as a whole is too complex to admit of treatment even by this method. Here we have to use the "inverse deductive" or "historical" method. This consists in a double process by which empirical generalisations are first made inductively from the facts of history and then verified by

deduction from known laws of human nature. It is derived from Comte, who had already put it forward as fundamental for his new science of "Sociology."

The doctrine of natural rights had been formulated with a practical aim in the American Declaration of Independence (1776) and the French Declaration of the Rights of Man (1789). James Mill's political doctrine had an important part in preparing for the Reform Bill (1832). If there was to be good government, it was necessary, according to James Mill and the "philosophical Radicals," that the interests of the rulers should be identical with those of the ruled. The only possible means of securing this was a wide extension of the suffrage, together with complete responsibility of representatives to constituents. J. S. Mill, taking it for granted that this aim, if it had not been completely attained, would be attained sooner or later, went on to consider the means of preventing the democratic system, when fully established, from lapsing into a tyranny of the majority. In the essays on "Liberty" (1859) and on "Representative Government" (1861) the distinctive practical aim put forward is to secure, whether by constitutional safeguards or by the education of opinion, a sphere of personal freedom marked off from the sphere within which political or social regulation is necessarily supreme. At the outset no "abstract right" of the individual to freedom of thought or speech is affirmed; the argument is, in accordance with Mill's general principles, that complete intellectual liberty, and even a certain toleration on the part of society for new "experiments in living," is to the ultimate benefit of society and the State. The "Essay on Liberty" has taken its place in English literature as a classical expression of this doctrine.

Mill's Ethics and Metaphysics.

The most important of Mill's remaining philosophical works are the "Utilitarianism" (first published in *Fraser's Magazine*, 1861) and the "Examination of Sir William Hamilton's Philosophy" (1865). This last work, apart from the "Logic," contains Mill's principal contributions to psychology and metaphysics. In it he maintains, in opposition to Hamilton's realistic theory of the external world, an idealism like that of Berkeley. Against the position that there are principles of knowledge not derived from experience he upholds his father's view that principles apparently irreducible can be explained by

'inseparable association." This he applies both to "necessary truths," such as those of mathematics, and to belief in an external world independent of consciousness. The "Utilitarianism" sets forth an ethical doctrine considerably modified from Bentham's to meet opposing views. This doctrine, however, is not now precisely representative of any philosophic school. The whole state of the controversy has been transformed by later ideas.

HENRY LONGUEVILLE MANSEL, BY WILLIAM RIVIERE.
(*By permission of Mrs. Mansel.*)

Mansel.

The "Examination of Hamilton" called forth a reply from Dean Mansel in "The Philosophy of the Conditioned" (1866). Henry Longueville Mansel (1820–71) was Hamilton's ablest disciple, and made important contributions to the revival of the Aristotelian logic. He maintains Hamilton's view that logic is purely and simply the science of formal thinking. His logical positions are developed in notes to a republication of Aldrich's "Artis Logicae Rudimenta" (1849) and in "Prolegomena Logica: An Inquiry into the Psychological Character of Logical Processes" (1851). In his Bampton Lectures on "The Limits of Religious Thought" (1858) he applies Hamilton's demarcation

of the spheres of the Conditioned and the Unconditioned to theology. The Conditioned is the sphere of knowledge; the Unconditioned, of faith. As we have no positive conceptions which are applicable to the Unconditioned, we must here accept without criticism the assertions of Christian theology. For revelation is established by external testimony; and all rational criticism is incompetent where positive conception fails. This position, as implying that moral attributes are to be ascribed to an entirely unknowable Deity, Mill attacks in a celebrated passage of the "Hamilton." A summary of Mansel's philosophy is contained in the article "Metaphysics" contributed to the eighth edition of the "Encyclopædia Britannica" and separately published in 1860.

Formal Logic.

The revival of logical studies in part took a direction which did not much influence, and was not influenced by, Mill's inductive logic. Attempts were made to give new development to logic on its formal side. The earliest of these was by George Bentham, well known as a systematic botanist. In 1827 he published an "Outline of a New System of Logic," in which is stated the discovery known as the "quantification of the predicate." The same discovery was afterwards put forth by Sir William Hamilton and by De Morgan, between whom at first arose a contest about priority. De Morgan's chief logical treatise, "Formal Logic, or the Calculus of Inference, Necessary and Probable," appeared in 1847. In it is stated his theory of the "numerically definite syllogism." Another eminent mathematician, George Boole, made still more important contributions to what has since been known as "symbolic logic." His theory is developed in "An Investigation of the Laws of Thought, on which are founded the Mathematical Theories of Logic and Probabilities" (1854). The mathematical development depends on the principle of the quantified predicate. The sign of quantity ("all" or "some") being attached to the predicate as well as to the subject, we get propositions such as "All equilateral triangles are all equiangular triangles." (This the ordinary logic regards as made up of the two propositions, "All equilateral triangles are equiangular" and "All equiangular triangles are equilateral.") The point for "symbolic logic" is that propositions of the new form can be treated as equations; and that logical processes can then be facilitated by the use of symbols.

Boole.

Working on Boole's system, William Stanley Jevons[1] (1835–82) arrived at a more convenient symbolic method in his works "Pure Logic" (1864), "The Substitution of Similars" (1869), and "The Principles of Science" (1874). The last two of these belong chronologically to our next period, but are mentioned here because they are so closely associated with the preceding logical movement. In "The Principles of Science" Jevons does not deal merely with formal inferences, but goes over the ground traversed by Mill in his inductive logic. Competent critics are of opinion that he displays more knowledge of actual scientific methods of investigation than Mill, but less philosophic insight. Jevons.

Among philosophers who cannot be brought definitely within any school are Samuel Bailey (1791–1870) and James Frederick Ferrier (1808–64). Bailey, while he is an associationist and a utilitarian, is a realist as regards the external world; holding that perception of objects is an act not capable of resolution into anything else. His realism led him to oppose Berkeley's theory of vision, of which J. S. Mill undertook the defence against him. Ferrier proceeds from the Scottish school, but is an idealist in the manner of Berkeley. In the "Institutes of Metaphysics" (1854) he attempts a strict demonstration of idealism after the geometrical method of Spinoza. Bailey and Ferrier.

Near the end of our period comes the unfinished Introduction to the "History of Civilisation in England," planned out on an immense scale by Henry Thomas Buckle (1821–62). Of this Introduction the first volume appeared in 1857, the second in 1861. It is admittedly the result of a unique range of reading, and displays brilliant generalising powers. The question that has exercised critics is whether the generalisations are of a really scientific kind. Whether accepted or not, many of them have become familiar in current thought, and have had a decidedly stimulating effect. Buckle.

THOMAS WHITTAKER. Biology.

During the nineteenth century biology fully kept pace with the other sciences in the process of specialisation. In particular, much advance was made in botany. The earlier years were occupied with the introduction of the "natural system" variously modified, and the displacement by it of the "artificial

[1] Best remembered, perhaps, as a political economist.]

system" of Linnæus. The services of Robert Brown in this respect were referred to in Volume V., p. 754. John Lindley (1799–1865), Sir William Jackson Hooker (1785–1865), and George Bentham, a nephew of Jeremy Bentham, carried forward the movement. Lindley's "Introduction to the Natural System of Botany" appeared in 1830. Sir William Hooker, like Lindley, was the author of an extensive series of works on systematic

JOHN LINDLEY, AFTER J. H. MAGUIRE.
(By permission of the Royal Horticultural Society.)

botany. Several of them deal with mosses and ferns and other cryptogamic plants. In the investigations of cryptogamic botany great progress has been made. This class of investigations is of peculiar importance as a comparative study; for the forms of plants described collectively as "cryptogamic" are extremely various in type, and display a number of transitional structures by which intervals of organisation that at first seemed impassable are bridged over. This is of interest in relation to the doctrine of evolution, the establishment of which is the advance in biological generalisation by which the century is distinguished.

In connection with the name of Sir William Hooker, his foundation of the herbarium at Kew must be referred to. In 1840 he took charge of the Botanical Gardens there. The preparation for his special work was made by botanical

INTERIOR OF THE GREAT PALM HOUSE, KEW GARDENS.

expeditions to Iceland and on the Continent of Europe. His work in geographical botany, as well as the direction of the Botanical Gardens, has been continued by his son, Sir Joseph Dalton Hooker, whose "New Zealand Flora" appeared in 1853.

Sex in Plants.

Although botany has reached so high a stage of specialisation, it is only within the present century that such a fundamental point as the distinction of sexes in plants has been completely

recognised. This distinction had indeed been noted in various cases from a very early period; and the facts had long been beyond doubt for scientific investigators. Yet in the earlier years of the period we are speaking of writers who denied them could still get serious attention. They have since then been far more elaborately investigated. The embryology of plants, in particular, has been carried some stages further. Of late the subject has entered upon a new phase through its relation to the investigations of Darwin, which must be the principal topic of the present section.

Zoology.

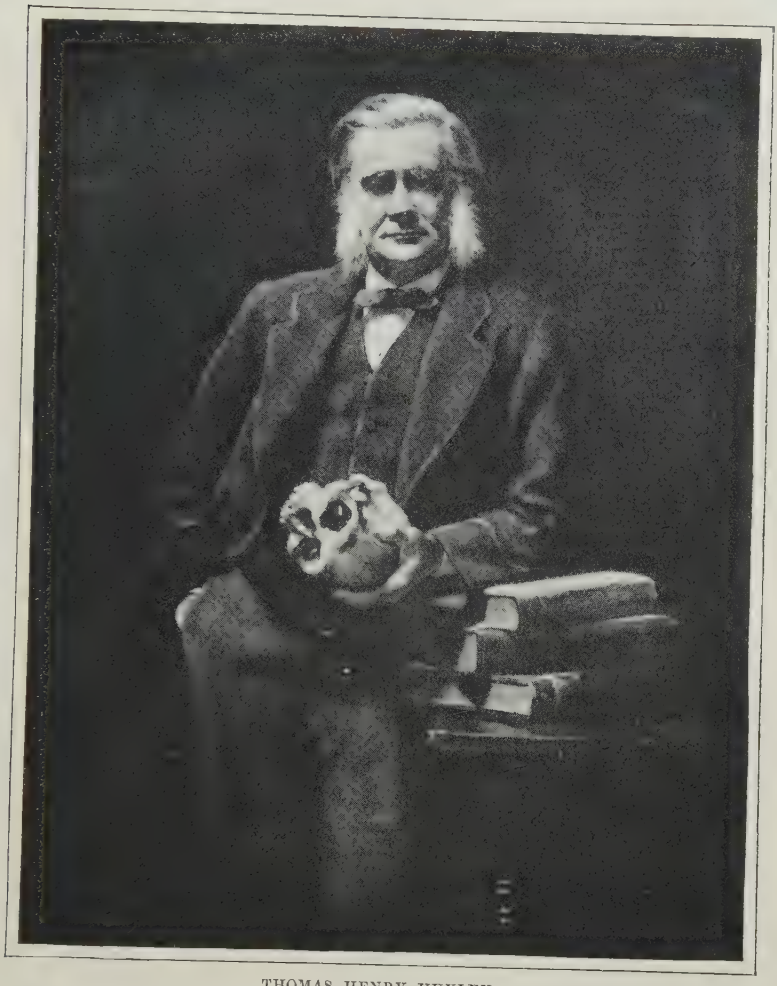
As in botany, so in the other special departments of biology, most names even of the more important writers must be omitted. In zoology, the work of comparative anatomy has been promoted especially by Sir Richard Owen ("Classification of the Mammalia," 1859) and Thomas Henry Huxley ("Man's Place in Nature," 1863). On questions of general theory these eminent investigators took quite different lines. Towards the great biological revolution of the century Owen appeared mainly as an opponent, while Huxley was its most zealous apostle.

The Theory of Evolution.

The establishment of the theory of evolution is not only the greatest biological event of our time; it is also the greatest scientific event. As a general biological theory the doctrine of the descent of species from one another can be traced back considerably beyond the beginning of the present period. From about the middle of the eighteenth century biological thinkers had put forward more or less coherent speculations tending in this direction. The speculations of Erasmus Darwin were mentioned in the preceding volume (V., p. 568). On the same line were those of Lamarck in the "Philosophie Zoologique" (1809). In 1844 appeared anonymously "The Vestiges of the Natural History of Creation," now known to have been written by Robert Chambers. The evolutionary ideas of this work attracted attention; but it was not scientifically well-informed, and had little influence on naturalists. The first effective statement of a scientific hypothesis capable of accounting for biological evolution is due to Alfred Russel Wallace and Charles Darwin. To Darwin's work in applying and testing the hypothesis over the whole field of biology is due its final acceptance.

From the Darwinian theory of the causes of evolution it is necessary to distinguish the doctrine of evolution itself. Though

the doctrine is older, it is only in our own time that the term evolution has come to be used as the antithesis to creation. Evolution is now equivalent in biology to "transmutation of species," and



THOMAS HENRY HUXLEY.
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is opposed to "special creation" of each kind of organism. In philosophy it is opposed to the doctrine that makes an original act of creation the absolute beginning of things. The philosophic doctrine of evolution takes in as particular cases biological

evolution and the evolution of the physical universe, as supposed, for example, in the nebular hypothesis of Kant and Laplace.

Its Genesis.

The term evolution in its more and more generalised senses was gradually prepared in the biological controversies of the eighteenth century. In the seventeenth century (Vol. IV., p. 116), Harvey put forward his embryological doctrine of "epigenesis" (1651). According to Harvey's view, the development of the embryo from the germ takes place by the addition of part to part. This was opposed by later observers; and the rival hypothesis was put forward that the parts are all present in miniature from the first, and that the process consists in a gradual unfolding or "evolution" of the germ. This latter hypothesis, accepted in the first half of the eighteenth century, was overthrown by more accurate observations in its second half. Within the first thirty years of the present century it became finally discredited in scientific opinion; and in the newer embryology the theory of epigenesis was restored. The term evolution, however, remained "as a general name for the history of the steps by which any living being has acquired the morphological and the physiological characters which distinguish it."[1] Evolution in biology, in this generalised sense, may be either that of the individual or of the sum of living beings. In the case of the individual, natural evolution is an undeniable fact. In the case of the sum of living beings, it is now regarded as a fully-established theory. The only controversies still existing on the subject are as to the relative efficacy of the various natural causes that have been assigned.

An additional word may be said on the modern generalisation of the term evolution as the name for a philosophical doctrine, and on the connection of this with the biological theory. The evolutionary philosophy in essence may be traced back to the earliest period of Greek thought. There, "creationist" comes later than "evolutionist" philosophy. Connected with the general view that the world and all its parts are evolved from certain primordial elements or from some different state of things, there were suggestions as to the evolution of life and even the transmutation of species.[2] These speculations

[1] *See* Professor Huxley's article, "Evolution in Biology" ("Science and Culture, and other Essays," 1881).

[2] The earliest recorded speculations upon transmutation of species seem to be those of Anaximander (born about 610 B.C.).

passed more or less completely into oblivion. The philosophy of medieval Europe was creationist on theological grounds When in modern times forms of life became more accurately known, and were distinguished into species that seem to remain always separate, it was natural to suppose, in accordance with the inherited creationist doctrine, that these were the forms described in the Book of Genesis as having been made in the beginning. The Pentateuchal cosmogony in its obvious meaning was held to be inseparably connected with Christian theology. Scientific men for a long time had nothing positive to urge against it. At length what is called the "scale of beings"—that arrangement of them in order from simple to complex, into which they fall of themselves—began to suggest evolutionary hypotheses. Yet, since no scientifically tenable account of the causes of the supposed transmutation was put forward, naturalists as a body declined to give up the creationist view. A sort of scientific dogma was constituted to the effect that species are immutable, and that each was originally due to a separate act of creation. Those, indeed, who were strictly scientific meant by creation, as they explained, nothing more than the introduction of a new species by an absolutely unknown cause; but for practical purposes the coincidence with the popular theological view was sufficient. Hence when in 1859 the Darwinian theory came forth and was seen to be a genuinely scientific attempt to explain the causes of transmutation, many thought that theology also was involved; and a popular as well as a scientific controversy arose. Biological evolution became what the Copernican astronomy had been long before, a point of attack for theological disputants. The controversy could not be decided without a certain modification—already to some extent compelled by geology—in the views held about the relation between science and the Bible, nor yet without bringing into notice much that had gone before in the way of general evolutionist as opposed to creationist philosophy. In particular it helped to bring forward the evolutionary philosophy which Herbert Spencer had already begun to build up on a basis of modern science. For Spencer, in the "Principles of Psychology" (1855), had definitely adopted biological evolution as the groundwork of his psychological doctrine. With no long delay he incorporated the Darwinian explanation of the causes of evolution in his own

Herbert Spencer.

system, and coined a name—"survival of the fittest"—for the Darwinian hypothesis of "natural selection." This name Darwin adopted and sometimes used as an alternative expression. It is time, however, to explain more precisely what the Darwinian hypothesis was, and to give some account of the long course of observation and study by which it had been prepared.

Darwin. Charles Darwin (1809–82) was born at Shrewsbury. He was the son of Dr. R. W. Darwin, and the grandson of Erasmus Darwin. Of his grandfather's speculations he learnt something at an early period, but, like those of Lamarck, they had no direct influence on his mind. All they did was to give him a certain general familiarity with the notion of a possible transmutation of species. For many years he held to the doctrine of special creation, though only in its strictly scientific sense as introduction of species from time to time by an unknown cause. He was a naturalist before he began to speculate; the taste for natural history being in his case, Darwin thought, certainly innate. At Cambridge, to which university he went with the intention of becoming a clergyman, he came in contact with many distinguished scientific men, and in particular was much stimulated by the influence of J. S. Henslow (died 1861), then Professor of Botany. The foundation of his scientific work, especially that upon species, was laid during his voyage as naturalist on the *Beagle* with Captain Fitz-Roy's expedition (1831–36). On his return he was already fixed in the determination to devote his life to science, the thought of a profession having been insensibly given up. In 1842 he left London with his family, and settled at Downe, in Kent. Henceforth the record of his life, as he himself says, is the publication of his several books.

Darwin published the Journal of his Voyage Round the World in 1839. Here are related the facts which first gave him a definite basis for speculating upon the origin of species. It has been noted that in the MS. Journal (1834) a reference occurs to species as having been created which was suppressed in the published Journal. Darwin's investigations upon species definitely began in 1837; so that they occupied—though not continuously—twenty-one years up to the writing of the "Origin of Species." The facts that first set him thinking seriously upon the subject are mentioned at the beginning of the "Origin."

"When on board H.M.S. *Beagle* as naturalist," he says, "I was much struck with certain facts in the distribution of the organic beings inhabiting South America, and in the geological relations of the present to the past inhabitants of that continent." There was a similarity of type, he noticed, between distinct species in the continent and in the adjoining islands; and existing species were closely similar to fossil species in the same area. Why

DOWNE HOUSE, DOWNE, KENT.

should this geographical and geological relationship exist if species were not derived from each other? This was the starting-point; but it is remarkable how from the first opening of a note-book on species in 1837 Darwin saw all the bearings of the problem. The case of domesticated animals as capable of throwing light upon it was already present. It seemed clear that as new races of animals are formed by man's selection—this being the more or less conscious selection of certain individuals by breeders—so certain natural races must be "selected" to form new species. The question was, How did such selection become possible? Darwin first saw his way to an answer to this question in 1838, when he read, "for amusement,"

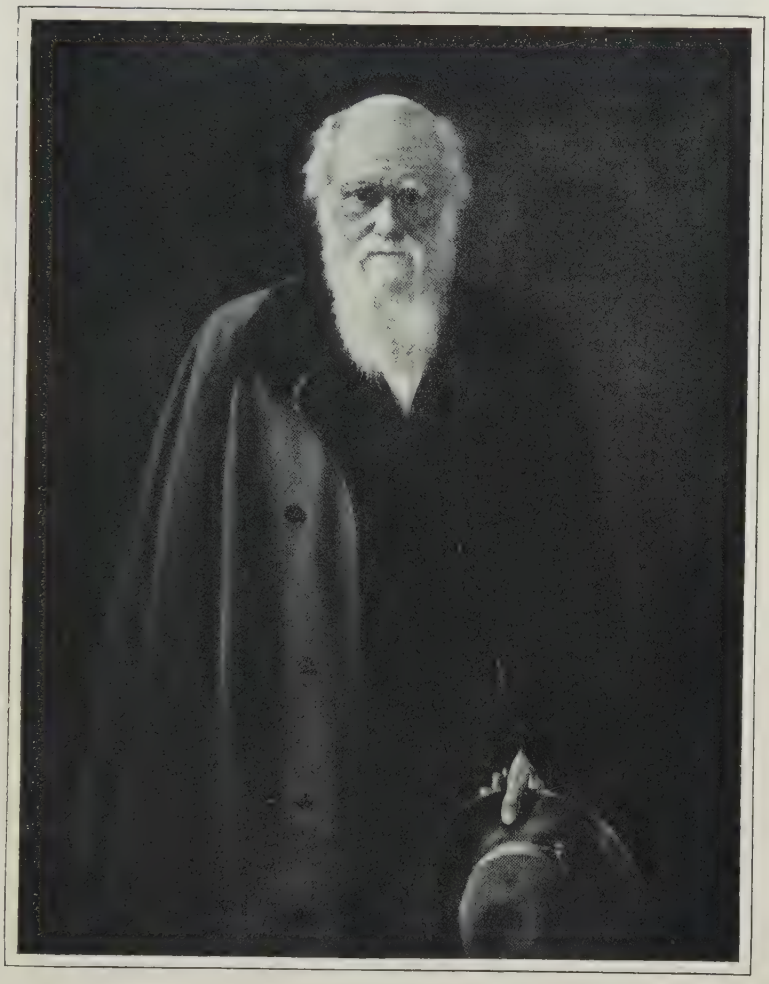
Darwin and Malthus.

Malthus on Population. Malthus (Vol. V., p. 654) shows how population tends to increase at a much quicker rate than the means of subsistence. Since in all races of living beings more are produced than can come to maturity, here is evidently the required material for selection. Darwin now had the clue to the whole subject; but he did not for some time allow himself to speculate in relation to the facts he was collecting. Till 1842 he simply accumulated relevant data, working, as he tells us, on true Baconian principles. He then wrote out a short sketch of his views, which was enlarged and copied in 1844. The mutability of species was approached on the side of variation under domestication. Living forms of all kinds tend to vary slightly from their parents. In the case of domesticated forms, breeders take advantage of these variations to produce new races; selecting those animals for breeding which display most of any characteristic they wish to develop. In the state of Nature, as in the domesticated state, there is variation. Thus there is material for a kind of "selection" here also, since not all that are born can live to maturity and continue the race. If the varying forms were destroyed or preserved entirely at random, there would of course be actually no selection, though there is material for it. But, as a matter of fact, variations do not all stand an equal chance. Any variations that are better adapted to the conditions tend to be preserved. Under constant external conditions a certain type may remain for a long period without change, because the individuals that vary much from it are likely to be less well adapted, and so have less chance of being preserved than more typical individuals. But, under changing conditions, some new variation is likely to be better adapted. If the conditions continue to change in the same direction, the favourable variation will be preserved, transmitted by heredity, and accumulated. Thus in the state of Nature variations are selected for the advantage of the species; just as, in the domesticated state, breeders select them for their own taste or profit. The "preservation of favoured races in the struggle for existence" may hence be called "natural selection."

Natural Selection.

This general conception had already been arrived at in the sketch of 1844, but it was long before Darwin thought he had worked it out sufficiently to think of publication. In the meantime he did a very extensive piece of detailed species-work.

From 1846 to 1854 he was occupied with a monograph on recent and fossil cirripedes. It is of interest in relation to the general



CHARLES DARWIN.

(By permission, from the painting by the Hon. John Collier, in the possession of the Linnean Society.)

problem to note that, in his own species-work, he was struck with "the variability of every part in some slight degree of every species." Professor Huxley regarded the undertaking of

this monograph on cirripedes as a remarkable instance of Darwin's sagacity. Familiarity with the manner in which species are actually constituted enabled him afterwards to avoid "endless errors of detail." Early in 1856 he began to write out his results on a scale three or four times as extensive as that which was afterwards adopted in the "Origin of Species." The work was steadily continued for over two years. In June, 1858, it was interrupted by the arrival of an essay from Alfred Russel Wallace (then in the Malay Archipelago) with the title "On the Tendency of Varieties to depart indefinitely from the Original Type." This turned out to be an anticipation of Darwin's view as to the part taken by natural selection in the origin of species. His first impulse was to publish the essay at once, and to bring out his own book afterwards, thus relinquishing all claim to priority, though he had been so long at work upon the subject. From this course he was dissuaded by Dr. (afterwards Sir J. D.) Hooker and Lyell, to whom his views about species had been submitted from the first. By their advice Mr. Wallace's essay was published in the "Journal of the Linnean Society" (1858) as part of a joint paper by "Messrs. C. Darwin and A. Wallace," of which the full title was "On the Tendency of Species to form Varieties; and on the Perpetuation of Varieties and Species by Natural Means of Selection." Darwin's contribution consisted of (1) extracts from the sketch of 1844; (2) part of a letter to Dr. Asa Gray dated September 5th, 1857. The paper was "communicated" to the Linnean Society by Sir Joseph Hooker and Sir Charles Lyell. Of this course Mr. Wallace fully approved, resigning to Darwin the priority in the more elaborate publication of their theory. After the publication of the "Origin" Darwin writes to Wallace:—

Darwin and Wallace.

> "Before telling you about the progress of opinion on the subject, you must let me say how I admire the generous manner in which you speak of my book. Most persons would in your position have felt some envy or jealousy. How nobly free you seem to be of this common failing of mankind! But you speak far too modestly of yourself. You would, if you had my leisure, have done the work just as well as, perhaps better than, I have done it."

The reading of the joint paper at the Linnean Society called forth no discussion. Not till the publication of the 'Origin of Species" (November 24th, 1859) did the great controversy begin.

The "Origin of Species" itself was meant at first to be

published as a paper or series of papers by the Linnean Society; and even when, as it grew in the writing, this plan was found impracticable, Darwin continued to regard it as an Abstract. It is still spoken of as such in the Introduction to the latest edition. The actual title is "The Origin of Species by means of Natural Selection; or, the Preservation of Favoured Races in the Struggle for Life." On its publication the controversy, scientific and popular, at once began. To Sir J. D. Hooker, Darwin wrote a month before the publication: "I remember thinking, above a year ago, that if ever I lived to see Lyell, yourself, and Huxley come round, partly by my book and partly by their own reflections, I should feel that the subject is safe, and all the world might rail, but that ultimately the theory of Natural Selection (though, no doubt, imperfect in its present condition, and embracing many errors) would prevail." Speaking for scientific inquirers like himself, Professor Huxley says: "That which we were looking for and could not find, till Darwin and Wallace published their views, was a hypothesis respecting the origin of known organic forms, which involved the operation of no causes but such as could be proved to be actually at work. . . . The 'Origin' provided us with the working hypothesis we sought." Lyell (with some reserves) and Hooker were converts as well as Huxley, and all proclaimed their adhesion as occasion or opportunity offered. Among the converts was also Dr. Carpenter, the eminent physiologist. The public advocacy of Huxley was one of the most powerful factors in gradually bringing the world over to "Darwinism."

The "Origin of Species" and the Darwinian Controversy.

Opposition to the Darwinian theory on the scientific side came mainly from the older naturalists whose ideas had become fixed. These from the first Darwin expected to be hostile. To Huxley he remarks: "I can pretty plainly see that, if my view is ever to be generally adopted, it will be by young men growing up and replacing the older workers, and these young ones finding that they can group facts and search out lines of investigation better on the notion of descent than on that of creation." Few things, he says to Lyell, had surprised him more than the paucity of objections and difficulties new to him in the published reviews. "One large class of men," he observes in a letter, "more especially I suspect of naturalists, will never care about *any* general question." And in another letter: "The general

Opponents of Darwin.

public appreciates a good dose of reasoning, or generalisation, with new and curious remarks on habits, final causes, etc. etc., far more than do the regular naturalists." The hindrance to the spread of the doctrine among the general public that had to be calculated on was the skilful appeal to theological beliefs supposed to be endangered by it. Nor was this entirely absent in scientific circles. Speaking of a possible discussion of the subject at a meeting of scientific men, Darwin says he believes, if it were raised, religion would be brought in by men whom he knew. This occurred in the actual discussions on the book. The theological opposition was stirred up especially by Bishop Wilberforce (then Bishop of Oxford), who, at the meeting of the British Association at Oxford in 1860, made an onslaught on Darwin and Huxley. Huxley was present, and replied in such a manner that the audience, at first hostile, was brought over, at least to the extent of acknowledging that the reply was triumphant. To Professor Owen, who had challenged Huxley on the subject of man's relation to the lower animals, he afterwards replied in the *Natural History Review* (1861). A review of the "Origin," which he got the opportunity of writing in the *Times* (December 26th, 1859), had much effect. In the *Quarterly Review* for July, 1860, there was a hostile review by Bishop Wilberforce. On this Huxley, with characteristic vigour, remarks: "Since Lord Brougham assailed Dr. Young (in the *Edinburgh Review*) the world has seen no such specimen of the insolence of a shallow pretender to a master in science as this remarkable production." The final word on the whole theological opposition has been said by Darwin, referring in a letter to a sermon by Dr. Pusey against evolution (1878)—

"Dr. Pusey's attack will be as powerless to retard by a day the belief in evolution, as were the virulent attacks made by divines fifty years ago against geology, and the still older ones of the Catholic Church against Galileo, for the public is wise enough always to follow scientific men when they agree upon any subject; and now there is almost complete unanimity amongst biologists about evolution, though there is still considerable difference as to the means, such as how far natural selection has acted, and how far external conditions, or whether there exists some mysterious innate tendency to perfectibility."

Upon the question how far external conditions have had a direct part in causing the transmutation of species, Darwin's own opinion fluctuated. So also as to the causes of evolution

assigned by Lamarck, viz. inheritance of the effects of the use and disuse of organs. He never came to hold, as Mr. Wallace does, that practically the sole cause of evolution assignable on biological grounds is natural selection. The "mysterious innate tendency to perfectibility" spoken of above, however, he entirely rejected; exactly as he rejected the tendency he had been at first inclined to assume, for each species to reach a term of its

Environment or Tendency.

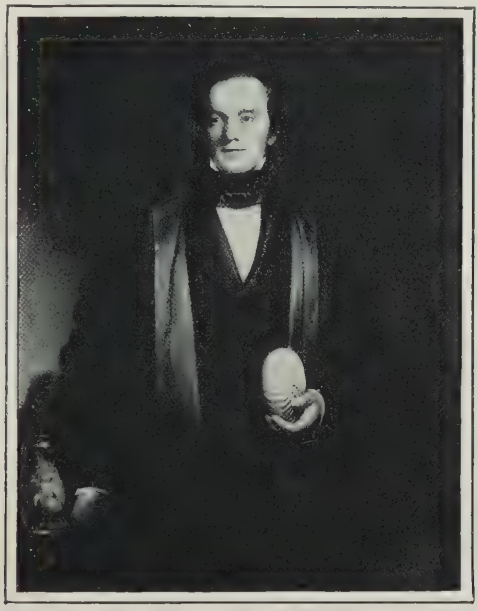


Photo: Walker & Cockerell.

SIR RICHARD OWEN, BY H. W. PICKERSGILL, R.A.
(*National Portrait Gallery.*)

life as the individual does. Species, he came to hold, have neither a natural term of their life nor a natural tendency to improve, but simply an indefinite variability. Thus the fact that species may remain long stationary or may degenerate is no difficulty on the Darwinian, as it is on the Lamarckian, theory of evolution. Darwin himself made this reply against objectors who pointed to facts of a similar kind in the case of human civilisations. As Spencer puts it, "survival of the fittest" is not always survival of the best. Still, on the whole and in the long run, according to both Darwin and Spencer, the successful

forms of organic life and the successful types of civilisation are the best. The theory of natural selection, as more than one eminent biologist has pointed out, restores teleology in a scientific form. The greatest problem that Darwin put before himself from the first was to explain the wonderful adaptations of organisms to their conditions. These were in the most striking cases quite inexplicable by the Lamarckian doctrine; and if they were not explained, it seemed to him that nothing was done. It was natural selection that succeeded in explaining them. There are, indeed, whole groups of facts, apart from those of adaptation, that fit in perfectly with the theory of descent, and are quite unintelligible without it. But the facts of adaptation, before Darwin's hypothesis, resisted all attempts to trace them to natural causes, and their explanation remains still the most conspicuous triumph of the general theory.

Darwin's Later Works.

After the "Origin of Species" Darwin's direct contributions to the theory were: "The Variation of Animals and Plants under Domestication" (1868); "The Descent of Man, and Selection in Relation to Sex" (1871); "The Expression of the Emotions in Man and Animals" (1872). The first of these is principally a collection of facts bearing on variability; but it also contains the hypothesis of "Pangenesis," by which Darwin sought to bring together and explain the facts of heredity. This, in the form he gave it, has not met with general acceptance among biologists. The peculiar favour with which he himself always regarded this "despised child" may perhaps find justification in the use Sir Francis Galton has made of it. By modifying Darwin's assumptions, retaining some and rejecting others, Galton arrived at his conception of the "stirp" (put forward in the Journal of the Anthropological Institute, 1875), which in essential points anticipates the celebrated theory elaborated by Weismann at a later date. The difference is that Galton does not absolutely reject the possibility of what are now called the "Lamarckian" factors in heredity, though he regards them as certainly of minor importance.[1] In the "Descent of Man" Darwin applies the

Galton.

[1] According to the theory of Pangenesis, all the cells of the body, during the process of self-division by which they multiply, throw off "gemmules." By aggregations of these the sexual elements are formed. The gemmules themselves multiply by self-division, and every gemmule admits of being

general theory of biological evolution to the particular case of the human species. His own opinion was known from an allusion in the "Origin," though he had not gone into the special question. It was, however, clear that if all other living beings were descended from one or a few very simple forms of life, the presumption would be that man himself has his place somewhere in one of the diverging lines of descent. This was now argued out; and in the same volume the theory of sexual selection was put forth. According to this theory, an important influence modifying species is exercised by preferences on the part of the female—*e.g.* in birds, for plumage of particular colours or patterns. The volume on "Expression of the Emotions" takes for its basis the work of Sir C. Bell on "Expression," but rejects his view that certain muscles were formed at first in order to express certain emotions, and seeks instead an explanation in accordance with the principle of natural selection.

The "Descent of Man."

Sexual Selection.

The Darwinian theory has all along found confirmation in its power of explaining details hitherto unexplained and of drawing attention to new facts. The work of the embryologists—among whom may be mentioned F. M. Balfour—has been confirmatory of the doctrine of evolution in general. A confirmation of the doctrine of natural selection is found in the fact of "mimicry"

Verification of the Theory.

developed into a cell. Galton accepts the distinction between body-cells and gemmules, and attributes to the latter the same power of multiplying and of developing into cells; but instead of taking the developed organism he takes the ovum as the starting-point of the theory, and in this way is able completely to transform it. The sum total of germs or gemmules in the newly-fertilised ovum he calls the "stirp." Only the smaller part of this, he supposes, becomes developed into the "personal structure" of the organism. Out of the residue of undeveloped germs or gemmules are formed the sexual elements of the next generation. Thus the notion of a germinal residue "continuous," as Weismann puts it, from one generation to another, is substituted for Darwin's notion of an aggregate newly forming from the body-cells in each new organism. In Weismann's theory hereditary transmission of characters depends wholly, in Galton's it depends mainly, on this undeveloped residue. The process of throwing off gemmules by the cells of the personal structure, which Galton still admits, is held by him to be of minor importance, because it is only needed to account for hereditary transmission of characters acquired through individual experience, and of this he finds hardly any evidence. Weismann, finding no evidence of it, is led to reject wholly the corresponding assumption.

—which occurs, for example, where a species of butterfly which is not specially protected against enemies has the external appearance of a protected species. This subject of "mimicry" was founded by H. W. Bates in "Contributions to an Insect Fauna of the Amazons Valley" (Transactions of the Linnean Society, 1862). And among the most fruitful applications of "Darwinism" are the botanical works of Darwin himself. With a brief reference to them we may conclude the section, thus returning to the subject with which we started.

Darwin's Botanical Works.

The remarkable thing in Darwin's botanical works is their peculiarly effective "revival of teleology" from the evolutionary point of view. Of these works the two most important are "The Various Contrivances by which Orchids are fertilised by Insects" (1862) and "The Effects of Cross- and Self-Fertilisation in the Vegetable Kingdom" (1876). The starting-point for these was given by C. K. Sprengel's "Secret of Nature Displayed" (1793), which Darwin had read in 1841 by Robert Brown's advice. Sprengel discovered that in many cases pollen is of necessity carried by insects to the stigma of another *flower*. What Darwin did was to prove experimentally that there is an advantage in the cross-fertilisation of different *plants*, and then to explain contrivances for cross-fertilisation as means of gaining this advantage. The natural cause of this teleological relation between flowers and insects is found in the struggle for existence. Those species of plants that vary in such directions as to evolve contrivances for cross-fertilisation survive by leaving more vigorous and more numerous offspring than results from self-fertilisation. The bearing of this generalisation—which has been summed up in the maxim, "Nature abhors close fertilisation"—on the problem of heredity is obvious; and in recent speculations on the subject it has already begun to display that unlimited suggestiveness which is one of the distinctive marks of Darwin's work.

D'ARCY POWER. Medicine and Surgery.

Much dissatisfaction had been felt at the attitude which the two great corporate bodies, the Royal College of Physicians and the College of Surgeons, had adopted towards the bulk of the profession in the earlier years of the century. Their position was too conservative and too exclusive to render them fitting

representative bodies. The question was a burning one as early as 1834, when a Select Committee was appointed by Parliament to inquire into and to consider the laws, regulations, and usages regarding the education and practice of the various branches of the medical profession. A voluminous and interesting Report was issued, but it had no practical outcome. A Medical Reform Bill was introduced unsuccessfully in 1840, and again in 1841, but it was not until 1858 that the medical profession of the United Kingdom obtained a statutory constitution. Twenty-one bodies had then the right of granting licences to practice, some in every branch of medicine and surgery, others only in medicine, surgery, or midwifery. The licence sometimes permitted its holder to practice in certain limited parts; sometimes it was universal for the country in which it was issued. It was granted, indeed, after examination in every case, but, as there was no independent control or supervision, it is not a matter of surprise that the examinations varied greatly in severity. At the College of Physicians the Fellowship, which alone conferred full rights within the society, was practically restricted to the graduates of the older Universities. At the College of Surgeons the superior order of Fellows, established in 1843, was open to anyone who had ability to pass the necessary examination.

The Medical Profession

The Medical Act of 1858 materially improved the position of the medical practitioner, but, as it left the individual licensing bodies in possession of their powers, it did not go far in producing order from chaos. The new Act gave a legal definition of the medical profession. It directed the establishment and maintenance of a Medical Register, by which the public and its courts of justice might distinguish "qualified" practitioners of medicine from pretenders and those who were not lawfully qualified. It gave to each registered qualification an equal currency in all parts of the British Empire. It created a superintending Council for the purposes of the Act, and it empowered this Council to strike off the Register the names of persons who should be convicted of crime or whose professional conduct it should consider infamous. It authorised the Council to impeach before the Privy Council any licensing body who should grant its diploma on insufficient conditions of study, or after an improper examination. It failed, however, to provide for

a complete examination, and it was amended by the Medical Acts of 1870 and 1886, though its chief clauses still hold good.

The most remarkable event in the period under consideration was the discovery and introduction into practice of general

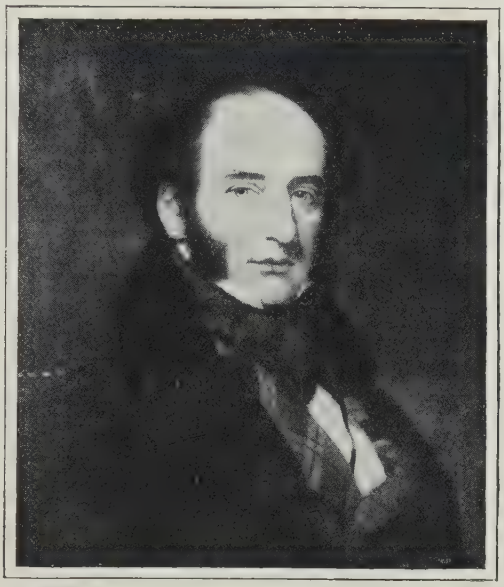
SIR JAMES YOUNG SIMPSON.
(*From the statue in Prince's Street, Edinburgh.*)

Anæsthetics

anæsthesia. The local use of chloric ether to deaden pain had been known to dentists for some time before 1844, but until that year general anæsthesia had never been induced for any surgical purpose. On December 11th, 1844, Horace Wells, a dentist in Massachusetts, inhaled nitrous oxide whilst another dentist extracted an aching tooth. His successful result proved the starting-point of a long series of experiments, in which another dentist, William Thomas Green Morton, took a leading part. He rendered himself insensible by inhaling sulphuric ether on September 30th, 1846, and from that date the use of

1865]

ether as an anæsthetic was established. The blessing spread rapidly from the Massachusetts General Hospital to all parts of the world, but on Nov. 10th, 1847, Dr. (afterwards Sir James Y.) Simpson, Professor of Midwifery in the University of Edinburgh, directed the attention of the Edinburgh Medico-Chirurgical



ROBERT LISTON, BY JOHN S. STUMP.
(*By permission of the Royal College of Surgeons, Edinburgh.*)

Society to a new respirable anæsthetic agent—chloroform. He considered that the new drug possessed important advantages over sulphuric ether, inasmuch as a smaller quantity was required to produce insensibility; because its action was more rapid, whilst its inhalation was more agreeable; and, above all, because no elaborate apparatus was required for its administration. He maintained, too, that it was especially adapted for use in his own department of practice. Chloroform was found to fulfil its expectations, and it speedily came into general use.

Surgery.

The introduction and extensive employment of anæsthesia caused the first great advance which had been made in surgery for many years, an advance for which the way had already been paved by that minute attention to the study of anatomy which

had characterised the earlier years of the century. The surgical art culminated in Robert Liston, a surgeon more rapid, dexterous, and brilliant than the world had ever seen. The fate of the brilliant operator was sealed by the advent of anæsthetics, and his place was taken by his more careful brother, who too often errs upon the side of slowness and is tediously minute in his attention to detail. The advantage, however, is all upon the side of the patient. Conservative surgery is the rule throughout the profession, yet operations are much more numerous than they were formerly, since the surgeon performs more intricate ones, and the patient gives his consent more readily as he no longer dreads the pain.

Medicine. The general practice of medicine was improving, but at a somewhat slower rate than surgery. Bleeding was the first of the old practices to disappear. It vanished suddenly and almost too completely. Nauseous mixtures given in large doses, abundant purgation, and counter-irritation still held sway. They were shortly to be displaced by a more elegant pharmacy rendered possible by improved chemical methods, and by more exact diagnosis obtained by a more thorough knowledge of morbid anatomy, and by the use of such instruments of precision as the ophthalmoscope, the laryngoscope, the otoscope, and the various forms of specula. The microscope became more and more serviceable to the working practitioner, whilst the clinical thermometer, which had been used by Dr. James Currie, of Liverpool, in 1797, was reintroduced by Dr. John Davy in 1844, though it did not come into general use in connection with disease until after the publication of Wunderlich's book in 1868.

Public Health. The most remarkable fact in connection with the public health of the country is the reappearance of diphtheria. It commenced as a world-wide epidemic which lasted from 1858–63, and it remained a very fatal endemic disease until lately, when the antitoxin treatment has given us means to combat it with some hope of a successful issue. The cattle plague of the Russian steppes was again epidemic in England in 1865 (p. 488), though it was more than a hundred years since its ravages had been felt in this country. Very great advances were made in State medicine. The total abolition of burial in 1852 within urban limits was a movement of the first impor-

tance, whilst the application of the Darwinian theory has yielded results of unlooked-for importance when it has been employed in connection with epidemiology. In 1862–63 the distress in the cotton-weaving districts of England led to a recurrence of the famine disease with which the older practitioners had been only too familiar, whilst Asiatic cholera again showed itself in 1865.

The Army Medical Service has undergone a complete change during the present century. A soldier who was wounded in the Low Countries or in the American War either remained where he fell until the battle was over, or he was helped to the rear by some of his comrades, who were sometimes more anxious to save their own skins than to help the injured man. The numerous engagements of the Peninsular War led to a greater attention being paid to the sick. The bandsmen of the regiment were first detailed as bearers, and they conveyed the wounded from the fighting line until they could be attended by the regimental surgeon. They were supplied with stretchers, and when no skilled assistance was immediately available they were ordered to carry their wounded patient until he could be placed in such empty carts or waggons as might be available to convey him back to the hospital. The bandsmen made but inefficient bearers, for they received no regular instruction in this part of their duty, whilst the commissariat waggons and the bullock-carts were wholly unsuited for the conveyance of men who had been badly wounded. **The Army Medical Service.**

Veterinary-Surgeon Cherry was one of the first to suggest an improvement upon this state of affairs when he advocated in 1825 the use of a special spring-cart for the conveyance of the sick and wounded during active service. It was not until the Crimean War that any real attempt was made to cope with the difficulty in a rational and humane manner. The early attempts were very bungling. The Army Hospital Corps was formed in 1854, and was provided with proper carts; but the attendants were military pensioners, who were physically incapable of performing the duties of bearers, and were too often found to be wholly unfit in other respects for the responsibilities imposed upon them. The Hospital Corps was soon disbanded, and for a time a certain proportion of soldiers was taken from the ranks to act as bearers and hospital orderlies. A fresh

departure was made in June, 1856, when the Medical Staff Corps was established, but the corps was disbanded in the following year for want of a proper military organisation. Its place in the service was then taken by the Army Hospital Corps, whose ranks were filled by soldiers who volunteered for duty after they had served a certain length of time with the colours. This corps continued, with various minor changes, until 1873, when a royal warrant placed all the medical officers in a single department, and abolished, with a few exceptions, the regimental system which had hitherto been a distinguishing feature of the English Army. The name of this department was altered in 1884 from the Army Hospital Corps to the Royal Army Medical Corps, and it consists of two parts. The corps is composed of non-commissioned officers and men serving in the military hospitals during peace, and with additional duties as stretcher-bearers in time of war. It is commanded by the commissioned medical officers known collectively as the Army Medical Staff. The Medical Staff Corps is a stationary body, with its headquarters at Netley, officered by the Army Medical Staff, which is constantly shifting. Officers as well as men, however, are trained in their duties by a special drill to qualify them for conducting the transport of the wounded both in the open and in mountain warfare.

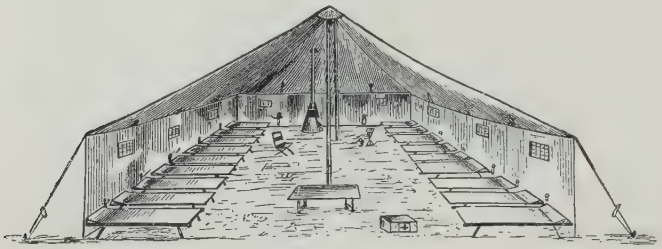
The responsibility for the immediate treatment of the wounded upon the field of battle is divided. The wounded man may be first assisted by his comrades, for two men in each company are specially trained to render first aid to the injured. He is carried to "the collecting station," which is as near the fighting line as possible, either by these men or by the bearers of the Medical Staff Corps, acting under the orders of a surgeon-captain or a surgeon-lieutenant. The "collecting station" is in charge of a sergeant of the Royal Army Medical Corps, whose duty it is to see that the wounded men on their stretchers are carefully placed in the waggons here ready to convey them back to the "dressing station." This is a building or tent, near a good supply of water, and as close as is convenient to the "collecting station." It is under the control of a surgeon-major, and it completes the "first line of assistance." Minor and urgent capital operations are performed at the "dressing station," but it is so near the line of fire that an advance or retreat may become

NETLEY HOSPITAL.

Photo: F. G. O. Stuart, Southampton.

necessary at any moment. The wounded are conveyed by a second set of waggons from the "dressing station" to the "field hospital," beyond the line of fire and constituting the first link in the "second line of assistance." From the "field hospital" the wounded may be transferred to the "station hospital," and may thence be transported further and further to the rear until he reaches at last the "base hospital," which receives the chronic cases.

Such is the theory of the treatment of those wounded in battle. It appears to be effective in small wars, where the number of those injured is not great, but fortunately we have



AMBULANCE TENT.

(*From the "Manual of Ambulance Transport," by Sir T. Longmore and W. A. Morris, by permission of the Controller of His Majesty's Stationery Office.*)

not as yet had any opportunity of ascertaining whether so complicated a system will be of service after a great battle. It had often been tested in small wars, where the number of those injured was not great; and the war of 1899–1902 in South Africa proved that it was efficient in a long campaign, where it was sometimes necessary to treat large numbers of wounded men.

W. LAIRD CLOWES. The Mercantile Marine.

For many years after the general introduction of steamships for ocean passenger traffic, and for packet service, they were comparatively little used for the ordinary purposes of distant trade, the greatly increased cost of working them not being compensated for by the relatively slight saving of time in those days of low-pressure boilers and moderate speeds. But as engines and boilers began to improve, speeds to rise, and passages to diminish largely in duration, it became evident that the position of the merchant sailing-ship as a freight-carrier for all save the

cheapest and least perishable commodities, was being seriously threatened. It was plain, too, that comparatively slow vessels of the old steady-going bluff-built East Indiaman type had no longer a chance in the competition. The consciousness of this caused a remarkable advance in the art of sailing-ship construction; first in the United States, and then, when the commercial marine of the great American Republic had been crushed by the consequences of the Civil War, in Great Britain. Some progress, indeed, was made in England and Scotland ere the American Civil War had well begun; and it was much facilitated by the introduction of the system of composite construction—an iron frame with wooden planking for ships' hulls. But it was not until after the war that the final rivalry between canvas and steam reached what may be called the historic stage. It would be scarcely fair to say that canvas was beaten on its merits; for it is a remarkable fact that until the Suez Canal was opened the quickest passages between China and England were performed by sailing vessels. The piercing of the isthmus, however, decided the contest in favour of the steam, and neutralised the splendid qualities of the marvellous clippers which, during the four or five years ending with 1872, when the hopelessness of the struggle became recognised, fought so gallantly with their fate.

The Clipper Ships.

Among the most celebrated of these clippers were the *Cutty Sark*, the *Thermopylæ*, and the *Sir Lancelot;* and among the designers and builders who gained distinction in connection with them and similar craft were Messrs. Robert Steel & Co., of Greenock; Messrs. Walter Hood & Co., of Aberdeen; Mr. William Pile, of Sunderland; Mr. B. Waymouth, later Secretary of Lloyd's Register; and Captains Maxton, Rodger, and Bullock. All the ships were engaged in the China tea trade; and the rivalry which produced such extraordinary results had its direct origin in the anxiety of English merchants to receive each year the first portion of the tea crop at the earliest possible moment. There were thus annual races home, the prize to be won being very substantial owing to the craving demands of the London market. The most noteworthy of these races took place a year or two before the completion of the craft above mentioned, and consequently before the very highest triumphs of sail-power had been attained; but a word concerning it must be said, if only to

The Tea Races.

illustrate how close was the competition. It was in 1866, and five vessels, the *Taeping, Ariel, Serica, Fiery Cross,* and *Taitsing,* ran. The three first-named sailed from Foo-chow-foo on the same day, and, though they lost sight of one another during the voyage, arrived in the Thames with only a period of a few hours between the first and the last.

Fast Sailing.

The *Cutty Sark* never did such extremely fast sailing as was sometimes accomplished by the *Thermopylæ* and the *Sir Lancelot ;* but she gained great distinction in 1870–72 by her plucky contests with both those famous ships. On the last occasion, in spite of the fact that she lost her rudder, she ran home from Shanghai as quickly as the redoubtable *Sir Lancelot* did from Foo-chow-foo, the time in each case being 122 days. But, compared with the record-passage of each of her opponents, this was a slow voyage. The *Thermopylæ* (p. 749) was a composite clipper of 947 tons register, measuring 210 feet long by 36 feet beam, and having 21 feet depth of hold. She was designed by Mr. Waymouth, and built in 1868 by Messrs. Hood for Messrs. George Thompson, junr., & Co. In 1868 she ran from London to Melbourne in 60 days; but her most brilliant performances were in 1869 and 1870. In the former year she left Foo-chow-foo on July 3rd, and arrived in England on October 2nd, having made the passage in 91 days. On one day in the latter year she covered 330 nautical miles, a distance equal to nearly 16 statute miles an hour. This was almost the best speed of the finest ocean steamers of those days; yet, magnificent though it was, it was exceeded by the record of the *Sir Lancelot,* which was indeed "the fastest clipper that ever cleft a wave." The *Sir Lancelot,* also a composite craft, was built by Steel of Greenock for Mr. James McCunn, and was of 886 tons register, measuring 197 feet 6 inches long, by 33 feet 7 inches broad, and having a depth in hold of 21 feet. When fully laden with 300 tons of various ballast and 1,430 tons of tea, she drew 18 feet 7 inches of water forward, and 2 inches more aft. Her complement was 30 all told, and when in racing trim she spread no less than 45,500 superficial feet, or considerably more than one acre, of canvas. In 1869 she ran from Foo-chow-foo to the West India Docks in just under 90 days, and made, as her best run in twenty-four hours, the unparalleled distance of 354 miles. On December 5th, 1890, the

great Cunard steamer *Servia*, of 10,000 horse-power, being then on a homeward passage from New York, covered exactly the same distance; but the average distance run by the *Servia* on each complete day of that particular passage was only 342 miles. The comparison is sufficient to establish the altogether marvellous performances of the sailing clippers. Long ere the *Sir Lancelot* had made her reputation, the British clippers had hopelessly beaten the American clippers which in the previous

THE CLIPPERS *ARIEL* AND *TAEPING* RACING OFF THE LIZARD.
(*By permission, from the "Illustrated London News,"* 1866.)

generation had been the "flyers of the seas"; and in the 'sixties and early 'seventies it was quite a common thing for British clippers to be engaged to convey early tea to New York. The splendour of the results attained failed to prevent the most valuable sea-borne commerce of the world from passing from canvas to steam; but the efforts were not wasted. The lessons learnt through the clippers were utilised in the improvement of yacht building.

Steam-ships.

The first passenger steamer[1] of any kind was probably the *Clermont*, which was launched at New York in 1807, and which for some time afterwards ran regularly on the Hudson. The next

[1] Some of the information in subsequent pages has been kindly supplied by the Secretaries of the P. & O. and R.M.S. Companies, and by Messrs. Grindlay & Co.

The Atlantic Service.

was the *Comet*, launched upon the Clyde in 1812 (V., p. 815). But these vessels were not sea-going ships. In 1818, however, a Mr. Scarlborough, of Savannah, Georgia, purchased a vessel which was on the stocks there, fitted her with engines and paddles, named her *Savannah*, and in 1819 crossed in her to Liverpool, occupying 32 days on the voyage. This craft, owing to the relatively small amount of fuel carried, could not steam the whole distance, and was for eleven or twelve days under sail; and it was not until 1838 that any ship crossed from port to port under steam alone. In that year two vessels performed the feat, and both were British. One was the *Sirius*, belonging to the British and American Steam Navigation Company; the other was the *Great Western*, belonging to the Great Western Steam Navigation Company. The *Sirius*, 178 feet long by 25 feet 6 inches broad, was of 703 tons, and 320 nominal horse power. She left Cork on April 4th, 1838, and, after encountering severe weather, arrived inside Sandy Hook on April 22nd, and anchored on the following day in the North River. The *Great Western*, 236 feet long by 35 feet 6 inches broad, was of 1,340 tons, and 750 nominal horse-power. She left Bristol on April 8th, and entered New York on April 23rd. The best day's run of the *Sirius* was 220 miles; that of the *Great Western* 247 miles. The average speed of the former was 7 knots; that of the latter 8·2 knots an hour. On her first homeward voyage, the *Great Western* carried sixty-eight cabin passengers at 35 guineas apiece, and 20,000 letters. When she left New York she had on board 570 tons of coal; when she reached Bristol, 178 tons remained. This was very soon after Dr. Dionysius Lardner had been so rash as to declare: "As well might they attempt a voyage to the moon, as to run regularly between England and New York." At once new vessels for the Transatlantic trade were built. The owners of the *Sirius* produced the *British Queen* and the *President;* the owners of the *Great Western* eventually produced the first Atlantic iron screw steamer, the *Great Britain* (p. 466); while another company, the Transatlantic, ran the *Royal William* and the *Liverpool.* The Transatlantic Line was the first to run from Liverpool, and was the pioneer of the enormous New York traffic which now steams in and out of the Mersey. Such were the small beginnings. In 1838, as has been seen, the record steaming time between

England and New York was about 15 days. The successive improvements effected by the introduction of the screw, the invention first of compound and then of triple expansion high-pressure engines, the corresponding progress in boiler construction, the substitution of iron for wood, and of steel for iron as the material of the hulls of vessels, and the general increase in size of ships and power of engines, reduced the record for 1885 to less than seven days. Nor was this the only measure of the progress made during the period. In 1838, even

THE *GREAT WESTERN.*
(By permission of Messrs. Henry Castle & Sons.)

the best kind of ocean travelling was excessively disagreeable, especially to persons of delicate health and to women; and a very few days after leaving port the supplies of fresh food became exhausted. But long before 1885 there had been a complete revolution in this respect through the employment of artificial refrigeration and cold storage; so that the traveller, although he might suffer from motion and confinement, was deprived of few or none of the material comforts of a first-rate hotel on shore.

Size of Steamships.

The dimensions of some of the earlier ocean steamships have been glanced at. There was soon a great increase in size; and as far back as 1858, when the *Great Eastern* was launched at Millwall, after designs by I. K. Brunel (p. 280), the limit of magnitude attained in the nineteenth century, though by no

means of power and speed, was reached. This colossal vessel was 679 feet 6 inches long, by 82 feet 8 inches broad, and had a depth of 48 feet 2 inches, and a draught when loaded of 28 feet. Her net tonnage was 13,344, and her loaded displacement was estimated at 23,000 tons. Built of iron, she was driven by screw as well as paddles, and was rigged as a six-masted barque. She made several voyages to America at great loss to her owners, but was found so useful in the laying of the Atlantic cable of 1866 that for a time she earned money as a cable ship. The experiment was, however, too costly to be repeated; and the biggest ocean steamer running in 1885 was the *City of Rome*, which measured only 560 feet 2 inches long by 52 feet 3 inches broad, with a depth in hold of 37 feet. Close behind her in point of size came the sister ships *Etruria* and *Umbria*, of the Cunard line. But in 1885, size again betrayed a tendency to grow; and although the lengths to which it went in 1858 were not repeated till 1903, even the *City of Rome*, with her 8,453 gross tonnage, and her 11,153 indicated horse-power, is almost insignificant in comparison with the later monsters, like the *Campania* and *Lucania*, of nearly 13,000 gross tonnage, and 30,000 indicated horse-power, or the second *Oceanic*.

The Great Lines.

Among the numerous great passenger and mail-carrying steamship lines which sprang into existence consequent upon the supersession of sail-power as the principal means of locomotion at sea, are the following:—

Name of Company.	Date of Establishment or Incorporation.	Trading to
Royal Mail Steam Packet Co.	1839	West Indies, S. America, Pacific.
Peninsular and Oriental Co.	1840	India, the Far East, Australia.
Cunard Steamship Co.	1840	United States, Mediterranean.
Pacific Steam Navigation Co.	1840	S. America, etc.
Inman Steamship Co.	1850	United States.
J. and A. Allan Brothers	1852	Canada, United States.
African Steamship Co.	1852	Africa.
Union Steamship Co.	1853	S. Africa.
British India Steam Navigation Co.	1855	India and the Far East.
Anchor Line	1856	N. America, Mediterranean, India.
Guion Line	1866	United States.
British and African Steam Navigation Co.	1868	West Africa.
White Star Line	1870	United States, etc.
Dominion Line	1872	Canada, United States.
Castle Line	1872	S. Africa.
Orient Line	1877	Mediterranean, Ceylon, Australia.
Natal Line	1879	S. Africa, India.
The Shaw, Savill, and Albion Co.	1884	Australasia.

THE *GREAT EASTERN* OFF THE ISLE OF WIGHT.
(*From a painting in the Victoria and Albert Museum.*)

There are many others—such, for example, as the New Zealand Shipping Company, the Clan Line, the Bibby Line, the City Line, etc. etc.—but, for the purpose of illustrating the gradual growth of the modern British mercantile marine, which has had so enormous an influence on the consolidation of the empire, and the extension of British commerce, it will suffice to note a few facts in the histories of some of the older companies mentioned in the above table.

The Royal Mail Co.

The Royal Mail Steam Packet Company, though chartered in 1839, did not begin active work until 1842. Its first

THE *CAMPANIA*.

steamers, fourteen in number, were 240 feet long and of 1,300 tons, and 400 nominal horse-power—with a speed of little more than eight knots. In 1885 it owned about 80,000 tons of shipping.

The P. & O.

The Peninsular and Oriental Company was incorporated by Royal Charter in 1840, but the Peninsular Company, which was the parent concern, was started in 1837, while the steamers which the Company took over had been running for some years previously as far as Lisbon only—the first of them, the *William Fawcett*, of 206 tons and 60 horse-power nominal—as early as 1829. The new Company quickly succeeded in establishing a postal service from Falmouth to Vigo, Oporto, Lisbon, Cadiz, and Gibraltar. This was the beginning of its extensive mail services *viâ* Egypt, namely, to India, China, Japan, and Australia.

The *Hindostan*, in 1842, was the first steamer despatched by the Company *viâ* the Cape, for the purpose of running between Suez and Calcutta, and in less than three years afterwards the chain of mail communication with India and China was completed, Australia being also brought within the sphere of the Company's operations in 1851.[1]

In the earlier days the Overland Route through Egypt, which determined the operations of the Company, was a very primitive

MODEL OF THE *WILLIAM FAWCETT*.
(By permission of the Peninsular and Oriental Steam Navigation Company.)

affair. It had been pioneered by Lieut. T. Waghorn, R.N., but had never been of any real value until the P. & O. Company, by their enterprise, settled the question of sea conveyance. After landing at Alexandria,[2] the first part of the transit was by the Mahmoudieh Canal, the great work of Mehemet Ali, for connecting Alexandria with the Nile, by means of which the produce of the Delta was diverted to that port from Rosetta, the former emporium of trade. This journey of 48 miles was accomplished in a big mastless canal boat, in form not unlike the dahabeahs

[1] The Australian Mail Service was interrupted by the Crimean War, and subsequently passed for a time into the hands of the Eastern and Australian, and of the Royal Mail Company, but was resumed by the P. & O. in 1859.

Abridged from the *P. & O. Pocket Book*, published by the Company.

used for ascending the Nile, which was towed by a steam-tug at the modest rate of five miles an hour. From Atfeh, where the Canal debouches from the Nile, steamers started for Cairo, a distance of 120 miles, and accomplished the trip in about sixteen hours. Passengers had then to remain the night in Cairo, and sometimes even two or three days. Those who may have travelled from Suez across the Isthmus in summer will recall with vivid gratitude their plunge into the big stone baths in the lower region of Shepherd's Hotel. From Cairo the route lay across the desert for ninety miles, and the journey was performed in two-wheeled omnibuses holding six persons, drawn by four mules or horses, the road being merely a cutting in the sand, which in the night time was not distinguishable from the desert itself. Indeed it was a very frequent occurrence for the horses to stray into the desert when the driver supposed he was in the middle of the road, the mistake being only discovered when the beasts were floundering in a bank of sand, from which they were often not extricated until other horses had been brought to the rescue from the nearest station, four or five miles away. The transport of cargo by these primitive methods was almost more difficult than that of passengers, more especially between Cairo and Suez, where every package had to be carried on a camel's back. Many thousands of these animals were employed in connection with this work, which embraced not only the transport of mails and cargo, but also of water from the Nile for the several desert stations, and for Suez. It is a curious fact that it was cheaper to send even steamer coal from Alexandria across the desert in this way than to send it round the Cape by sailing vessel to Suez. Indeed, not more than half a dozen vessels found their way up the Red Sea with coal during the whole time when the Company required to take fuel on board there. It is needless, therefore, to say that the directors of the P. & O. Company were the first to urge upon the Pasha of Egypt the necessity of constructing a railway across the Isthmus. The final accomplishment of this task in 1859 changed the character of the Egyptian transit to that with which the public became familiar in later times. The services of the Company, however, have for many years been carried on by the Suez Canal.

The progress of the Company has been one of steady development, and it continues in point of the value of its tonnage to

THE *RIPON* LEAVING SOUTHAMPTON WITH TROOPS FOR THE CRIMEA.

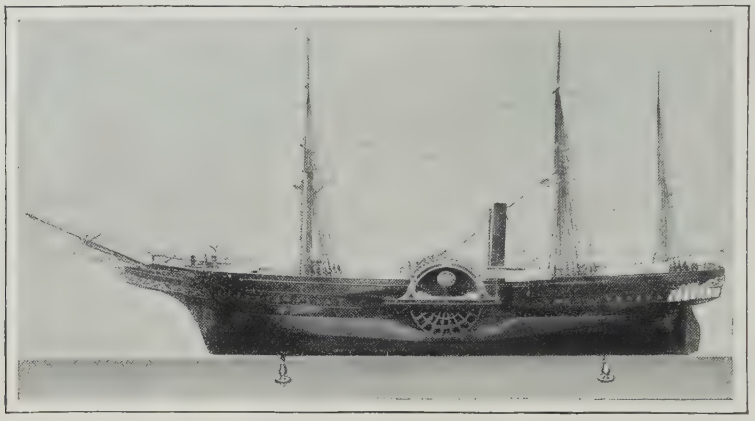
(From a painting, by permission of the Peninsular and Oriental Steam Navigation Company.)

be at the head of maritime enterprise in this country. The report for 1903 showed a tonnage of 351,433 tons and 361,658 horse power, acquired at a cost of nearly £10,000,000.

The Cunard Line originated in consequence of the determination of the British Government to send its American mails by steamers instead of by sailing vessels. When tenders for this purpose were invited, Mr. Samuel Cunard, a merchant of Halifax, Nova Scotia, came to England, and succeeded in persuading Mr. G. Burns and Mr. D. McIver that there was a good opportunity for establishing a magnificent business. The three gentlemen tendered successfully, secured a subsidy of £80,000 a year, and at once built four paddle steamships, the first of which, the *Britannia*, left Liverpool for Boston on July 4th, 1840, and made her port in 14½ days. The dimensions and general particulars of these first ships of the great line were:— Length, 207 ft.; breadth, 34 ft. 2 in.; depth, 22 ft. 4 in.; tonnage, 2,050; nominal horse-power, 740. For some years the Cunard Company enjoyed almost a monopoly of the best-paying portion of the Atlantic trade, but presently American competition arose. A number of merchants in New York, Philadelphia, and Boston combined, and, having obtained a Government subsidy, started the Collins Line, with the avowed intention of "running the Cunarders off the Atlantic." The four vessels of the new company averaged on their passages from America 9 days 17 hours, and to America 11 days 10 hours 26 minutes, while the average of the Cunarders was nearly a day and a half longer; but extravagance, mismanagement, and misfortune soon ruined the American company, and once more the Cunard Line became supreme, although rivalry on a smaller scale was never altogether lacking, until the coming of the inevitable time when great English rivals arose and forced the pioneers of the Atlantic traffic to divide with them the profits of the trade. The Cunard has always, and deservedly, held the reputation of being a fortunate line. It is true that it lost the *Columbia* in 1843, and the *Tripoli* in 1872; and that the *Oregon*, the finest and fastest of its fleet existing in 1885, was mysteriously sunk by collision in the course of the following year; but up to the end of the period under review the company was able, apparently with literal truth, to boast that it had never been responsible for the loss of the life of a single one of

its millions of passengers. The company adopted the screw for its finest ships in 1863, transferred its preference from wooden to iron vessels about 1864, and began to substitute steel for iron about 1881.[1]

The credit of having originated the Pacific Steam Navigation Company is due to an American, Mr. William Wheelwright, sometime United States consul at Panama. He obtained certain privileges and concessions on the Pacific coast of South America, and then, coming to England, formed a company,



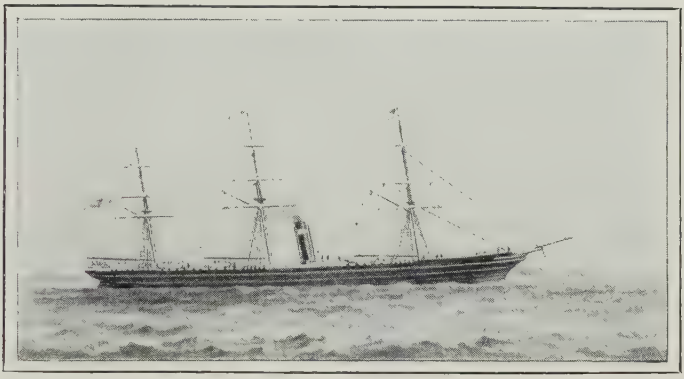
MODEL OF THE *BRITANNIA*.
(*By permission of the Cunard Steamship Company.*)

which was given a charter of incorporation in 1840. The company began with two small steamers, the *Chili* and the *Peru*, of but 700 tons register, and, after overcoming considerable difficulties, succeeded in gradually monopolising most of the best trade on the Pacific coast of South America. It deserves to be recorded in its favour that it was the first of the ocean-going lines to adopt compound engines. It took this step as early as 1856, and, for many years after that date, was almost singular in its faith in the new form of machinery.

The first great English rival of the Cunard was the Inman

[1] In 1903 it entered into close relations with the Government, undertaking to build, with its assistance, two new steamships of a higher speed than had been attained up to that date, and arranging to place its whole fleet in case of need at the disposal of the State.

Company, which was founded in 1850 by the amalgamation of two firms, one seated in Philadelphia and New York, and the other in Liverpool, under the style of the Liverpool, New York, and Philadelphia Steamship Company. During the Crimean War some of the original partners sold out, because they did not approve of their vessels being let to the Government for war purposes; and then the company took the name of a partner who had a less nice conscience, Mr. Inman. The company first attained celebrity by undertaking the conveyance of emigrants,



THE *CITY OF LONDON.*

(By permission, from Henry Fry: "The History of North Atlantic Steam Navigation." Sampson Low, Marston & Co.)

who had previously been carried by sailing vessels exclusively. By reducing fares it quickly destroyed the sailing-packet business, and prepared the way for the enormous emigrant traffic westwards which was one of the most striking phenomena of the third quarter of the century. But it made its way in the face of immense difficulties and numerous misfortunes. One of its first vessels, the *City of Glasgow*, sailed in 1854, and was never again heard of. In the same year another of its ships, the *City of Philadelphia*, ran ashore. In 1864 it lost the *City of New York*. In 1870 another of its liners, the *City of Boston*, disappeared mysteriously with all on board. And still later, it lost the *City of Washington* in 1873, and the *City of Brussels* in 1883. Subsequently to 1885 it was reorganised as an American company.

The Allan Line may be called the lineal descendant of a Canadian line of sailing ships dating from 1820. It established a steamer service in 1852; this developed into a mail service between Quebec and Liverpool in 1856; and, later, services between Halifax and Liverpool, and from Glasgow and Liverpool to Quebec, Boston, etc., were started and successfully worked.

The African Steamship Company, the earliest of the great African lines, may be said to have had its origin in the private expedition of Mr. Macgregor Laird, of Liverpool, in 1832, for the exploration of the Niger. A regular mail and passenger service to the West African coast was not, however, established until 1852, when the company was chartered. The first vessel launched for the purpose was the *Forerunner*, measuring 161 feet 5 inches in length, and of only 381 tons builders' measurement and 50 nominal horse-power. After 1885 the company amalgamated with the Liverpool firm of Elder, Dempster and Co., and greatly enlarged its sphere of action.

The Union Steamship Line began business as a steam collier company; but in 1857 it secured a contract to carry the Cape mails, and altered the character of its fleet.[1]

The British India Steam Navigation Company sprang into existence to meet a desire on the part of the East India Company for the establishment of a mail service between Calcutta and Burmah. In 1862 it received its present name. In 1885 it was the largest of the companies trading to the East, possessing as it did about 100 steamers, with an aggregate tonnage of 265,000; and in 1881 the British India Association, in conjunction with it, established a service from London to Java and Queensland.

The Anchor Line is a development of one of the old sailing-ship companies; and its first steamer, the *Tempest*, was, in fact, a converted vessel. Originally trading elsewhere as well, and still running to the Mediterranean and India, the company's energies have latterly been particularly directed to the cultivation of its Atlantic business.

The Galway Line, an Irish enterprise, was started in 1859, and began to run under its mail contract in June, 1860. By starting from Galway and calling at St. John's, N.F., the promoters hoped to reduce the time for telegrams between

[1 It has been amalgamated with the Castle Line since January 1, 1900.]

Europe and America to six days—there being then no Atlantic cable. A Government subsidy was secured of £5,000 per round voyage, and four large steamers were built; but the promoters were quite unable to fulfil their contract, and the project was abandoned in 1861. Its history had been one continuous record of disaster, nautical and financial alike.

The Guion Line began its operations with the *Manhattan* and the *Chicago*, but distinguished itself beyond its competitors by putting on the Atlantic the *Arizona* in 1879 and the *Alaska* in 1881. These vessels successively held the record for the passage between Queenstown and Sandy Hook. The *Arizona's* best times were—7 days 8 hours eastwards, and 7 days 8 hours 49 minutes westwards. The *Alaska's* best time, 6 days 18 hours 37 minutes on the homeward trip, gained for her the title of "the greyhound of the Atlantic." Travellers owe a debt of gratitude to the owners of these vessels, who initiated a great acceleration of speed, and in some measure obliged other companies to enter upon a course which several of them were very unwilling to take until they saw their profits threatening to pass from them to their more progressive rivals.

The White Star Line, owned chiefly by Messrs. Ismay, Imrie and Co., of Liverpool, began to run in 1872. The steamships, the first of which was the *Oceanic*, were designed and built by Harland and Wolff, of Belfast; they were all of a uniform and novel type, longer and with less beam relatively than any vessel then running. Their saloon accommodation was placed amidships, the engines being aft of it—the chief of many improvements for the comfort of the passengers which this line was the first to introduce; they had compound engines, which effected a considerable economy in coal. The new line sprang at once into a leading position, though its popularity was soon seriously affected for a time by the terrible wreck of the *Atlantic* on the Nova Scotia coast on April 1st, 1873, when 560 lives were lost. The *Britannic* and *Germanic*, added to the White Star fleet in 1874, lowered the record between Queenstown to Sandy Hook to less than eight days. The same owners afterwards established lines of steamships of a similar type between San Francisco, Japan and China, and also between London and New Zealand, the latter in conjunction with the Shaw, Savill, and Albion Company; and in 1889 and 1890 respectively the

Teutonic and *Majestic* were added to the Atlantic service. Subsequently to 1885, Messrs. Harland and Wolff also designed and built for them cargo steamers of a greatly improved type, each of which could carry 6,000 tons of freight (and some much more), besides about 1,000 live cattle, across the Atlantic at little less than the speed of the *Persia* in 1856, and on a far smaller consumption of coal. The first of these, the *Cufic*, was launched in 1888.[1]

Until the general introduction of the compound engine

THE FIRST *OCEANIC*, 1871.
(*By permission of Messrs. Ismay, Imrie & Co., Liverpool.*)

(p. 460) long voyages under steam were as a rule commercially unprofitable. Until the opening of the Suez Canal the passenger trade with Australia and (to a less extent) with India was largely carried on by sailing vessels; while, until the Inman and other Atlantic lines found it profitable to lower steerage fares, the Atlantic emigrant traffic was similarly conducted. The clipper ships of the Black Ball, White Star, and Aberdeen lines to Australia, the liners of Messrs. Money Wigram and Sons, and Messrs. Green's famous line of East Indiamen (some of which also ran to Australia), can here receive only a passing mention.

[1] The launch of the second *Oceanic*, of the *Celtic*, both exceeding the *Great Eastern* in some of their dimensions, and of other huge steamers, including a whole fleet for the Australian service, and the transfer of the line to American owners, though not to the American flag, belong to the twentieth century. The tonnage of the *Great Eastern* was first exceeded by the *Baltic*, launched in 1903.

THE *ALASKA*.

Photo: Pyrsley & Sons, Egremont.

But steam was to some extent employed on these long voyages; a monthly line of auxiliary screw steamers, the *Golden Fleece*, *Indiana*, and others, ran from London to India *via* the Cape and Mauritius in 1862–4, and steam-power was used as an auxiliary to sail-power in several Australian liners long before steamships finally displaced the old clippers. The *Royal Charter* and the *London* are probably the best remembered of these "auxiliary steamships," having been wrecked with great loss of life in 1859 and 1866 respectively. The *Great Britain*, too, ended her active career in the direct Australian service. Subsequently, mail steamships ran for some years between Panama, Auckland, and Sydney, in connection with the Royal Mail Company, and after the opening of the Pacific Railway a service was established between San Francisco and Australasian ports (1873), followed by a service from British Columbia to Australia in connection with the Canadian Pacific (1893). It was not until the establishment of the Orient Line, which at first took the Cape route, that direct and regular steam communication without transhipment was established with Australia, other than that provided by the P. and O. service.

A few words must be said, in conclusion, on the progress in lighting and buoying the British seas since the installation of the first sea lighthouses and lightships (Vol. V., p. 28). In the Middle Ages lights for the guidance of seafarers had been regularly exhibited as an act of piety by monks, hermits, or priests, as at St. Catherine's Point, in the Isle of Wight, and from the chapel on St. Alban's Head, the church towers of Blakeney in Norfolk, Boston in Lincolnshire, and elsewhere, but most of these were probably discontinued at the Reformation. Subsequently a few lighthouses were established under Royal patents, and maintained out of dues levied for the profit of the patentees, on vessels entering adjacent ports. Many of these were bought up by Trinity House (Vol. III., p. 157) during the latter part of the eighteenth century, and the last five, together with several which belonged to the Crown but had been leased to contractors, were vested in that Corporation by statute in 1836.[1] The Scottish and Irish lights are under boards established towards the end of the eighteenth century, all three authorities being subjected by the

[1] 6 & 7 William IV., cap. 79. The five were the Skerries (Vol. V., p. 29), Longships, Smalls, Spurn, and Tynemouth Castle.

statute in question to the control of the Board of Trade. Light dues are still regarded as tolls chargeable on the ships which profit by the lighthouses, and so retain a trace of their origin.

During the nineteenth century, particularly its latter half, immense progress was made. A host of lighthouses proved that modern engineering could build successfully alike on storm-swept rocks or on shifting sands. Of the first class are the lighthouses on the Bell Rock (1808–1811); Skerryvore, off Tiree (1836–1844); Bishop Rock (probably the most exposed lighthouse in the world, built 1852–1858 raised and strengthened in 1883–

MODEL OF THE *GREAT BRITAIN*.
(*Victoria and Albert Museum.*)

1887); the Wolf Rock, near Scilly (1862–1869), and the existing Eddystone, the fourth built eastward of Smeaton's in 1878–1882 partly because the foundation of the third lighthouse was being undermined. Of the second class the Maplin may serve as an example. The medieval coal fires survived in some few cases as illuminants till nearly the second quarter of the nineteenth century, and candles in some places till the third. Now, oil burners and complicated reflectors have been devised, the electric light has come into use, though not extensively, mechanism has provided an additional means of identifying lighthouses by the number and length of flashes they emit, and the invention of oil gas and acetylene has made it possible to place on buoys or beacons lights which need only

occasional attention. In addition, elaborate horns and steam sirens are replacing the bells, gongs, and guns formerly used to warn ships during fog, and wireless telegraphy (1904) is beginning to link the distant sea lighthouses and lightships with the shore. At the beginning of the nineteenth century there were hardly more than thirty lights off the British coast. In 1884, excluding harbour lights, there were nearly 200 lighthouses, and about sixty lightships.

W. E. BEAR. The Vicissitudes of Agriculture.

THE year 1846 was a notable one in the annals of British agriculture. The alarm of landowners and farmers at the Act for the repeal of the corn laws (p. 166) was extreme, and the ruin of British agriculture was confidently predicted. The spirits of the cultivators of the soil were further discouraged by a bad harvest and by a devastating visitation of potato disease, which was first known in this country in the preceding year. So great was the destruction of the crop that it produced the great Irish Famine of 1846-47 (p. 338). The deficiency of the corn harvest and the increased demand for flour due to the destruction of the potato crop, however, caused wheat to rise in price from 54s. 8d. a quarter[1] in 1846 to 69s. 9d. in 1847; while barley advanced from 32s. 8d. to 44s. 2d., and oats from 23s. 8d. to 28s. 8d. These advances were obtained in spite of a considerable increase of imports. In 1845 the total receipts of wheat, including flour in wheat equivalents, amounted to 1,141,957 quarters; in 1846 the quantity was 2,344,142 quarters; and in 1847 it rose to 4,464,757 quarters. All other kinds of grain and meal amounted to 1,287,959 quarters in the year preceding the repeal of the corn laws, to 2,408,032 quarters in that year, and to 7,449,107 quarters in 1847. Apparently these imports were in excess of the national requirements, for they were reduced about 45 per cent. in 1848, although there was another deficient harvest in that year; and yet the prices of corn fell to 50s. 6d. per quarter for wheat, 31s. 6d. for barley, and 20s. 6d. for oats. But it was not until 1849 that prices declined to the extent which had been expected as the result of Free Trade, and then commenced a period of depression which caused agriculturists

[1] These prices are averages for each year. In the week ending May 31, 1847, the average was as high as 102s., but speedily declined.

The Wolf Rock Lighthouse.

A Modern Lightship.

The Maplin Lighthouse.

EXAMPLES OF MODERN LIGHTHOUSES AND LIGHTSHIP

(By permission of the Elder Brethren, Trinity House.)

to fear that their most gloomy predictions were about to be realised.

Owing in great measure to the collapse of the mad railway speculation in 1847 (pp. 311, 489), a serious commercial crisis occurred in that year, and trade was in a prostrate condition for nearly five years longer. The prices of corn, it has been shown, kept up fairly until 1849, in which year wheat fell to an average of 44s. 3d. per quarter, barley to 27s. 9d., and oats to 17s. 6d. There was a further fall in 1850, and for wheat the minimum of 38s. 6d. was reached in 1851, by which time a recovery had set in for barley and oats. The annual average price of wheat had not been so low before during the century, and that of barley had only once before been so low, while oats had not once been as cheap as they were in 1850. Such prices were regarded as ruinous by the farmers of those days, and there was a great outcry for the re-imposition of the corn duties on the one hand and for a reduction of rents on the other. In consequence of the general depression of trade in the country, meat and dairy produce, as well as corn, fell in value. But the rates had been greatly diminished by the operation of the new Poor Law, and the tithe rent-charge had fallen a little, though, owing to the seven years' average system, not nearly in proportion with the fall in the prices of corn. A few of the great landlords granted remissions of rent; but hardly any allowed permanent reductions, and in many counties where labourers' wages were only 7s., or even 6s. a week in some cases, farmers were threatening a reduction.

According to Mr. (afterwards Sir James) Caird, the wages of agricultural labourers in England in 1846, immediately before the repeal of the corn laws, averaged 9s. 6d. a week. In 1851 he made the average the same, the range being from 7s. in a few of the southern, eastern and western counties to 13s. 6d. in Lancashire. There were extras for piecework and in harvest, and payments in kind, such as beer, fuel, and, in some cases, a cottage rent free, these allowances, as a rule, being greatest where wages were lowest. Therefore the sums named were not the total earnings in all cases, though some of the day labourers possibly lost nearly as much through short time as they gained from extras. In many counties there was a redundancy of labour, and wages were kept down by the bad system pursued by

the farmers of dividing the surplus men among themselves to keep them off the rates. This occurred in the southern half of England; and it is a curious fact that whereas Arthur Young, in 1770, estimated the average wages in the northern counties visited by him at 6s. 9d. a week, and those of the southern counties at 7s. 6d., Caird made the averages, in 1851, 11s. 6d. for the north and only 8s. 5d. for the south. The change had been wrought, of course, by the great progress made in the manufacturing and mining districts of the north. The Law of Settlement was held mainly responsible for retaining surplus labourers in one part of England while their services were needed in another, men in South Wilts receiving 6s. a week, while their fellows in one part of Lancashire were getting 15s. But some approach to the same disparity was to be found long after the Union Chargeability Act (1865) was passed, and is even to be noticed still. Miserably as the labourers were paid in the south of England, they were probably better off than they had been in the days of Protection, as it was estimated that the cost of provisions generally had fallen 30 per cent. between 1840 and 1850. A stone of flour, which cost 2s. 6d. in the earlier year, could be bought for 1s. 8d. in the later, while tea and sugar had fallen about 50 per cent.

For the purpose of investigating the extent and causes of the distress in the agricultural interest, Mr. James Caird, at the beginning of 1850, was employed by the *Times* to visit the principal counties of England, following the footsteps of Arthur Young after an interval of eighty years. Mr. Caird spent about thirteen months in his investigation, visiting thirty-two of the English counties, and gathering a large amount of interesting information, which was published in a volume entitled "English Agriculture in 1850–51," after it had appeared in the journal for which it was collected. With many indications of the agricultural improvement which had taken place since Young's time, the traveller found also much in confirmation of a statement made by Sir Robert Peel in a letter which is included in the preface to his volume. After remarking that Mr. Caird would find immense tracts of good land in certain counties, with good roads, good markets, and a moist climate, pretty nearly in a state of nature, undrained, badly fenced, and wretchedly farmed, Sir Robert said:—

"Nothing has hitherto been effectual in awakening the proprietors to a sense of their own interests. I cannot help thinking that a dispassionate and temperate contrast between the productiveness of their properties and that of others in less favoured positions, and the conclusive proof that might be exhibited that Protection had in their cases not stimulated improvement, but had probably been the parent of neglect, might reconcile them to the withdrawal of it, and induce them to look out for more certain aid in 'good farming under liberal covenants.'"

There is abundant evidence in the book to prove that in spite of the great improvements carried out by the best landowners and farmers in the several counties, the great majority had been rendered apathetic by the high prices which Protection for many years had secured to them.[1] Comparing Young's statistics with his own, Mr. Caird estimated that, in the eighty years ending with 1850, the average rent of land had risen 100 per cent., the average produce of wheat per acre 15 per cent., labourers' wages 34 per cent., cottage rent 100 per cent., the price of butter 100 per cent., that of meat 70 per cent., and that of wool upwards of 100 per cent. The price of wheat, after its great fall, was about the same in 1850 (40s. 3d.) as in 1770. Allowing for the fact that the smaller area of wheat grown in 1770 was produced on a higher average quality of land than the extended area of 1850, as the best soils were devoted to wheat, Mr. Caird points out that an increase of 15 per cent. in yield per acre (from 23 to 26½ bushels), although indicative of higher farming, was insignificant in relation to the enormous increase of rent. On the other hand, he thought that, as larger and earlier maturing cattle and sheep of better size and quality were kept on the land than at the earlier date, the production of meat, wool, and dairy produce had kept pace with the advance of rent. As matters turned out, it is fortunate that Mr. Caird was more concerned with the changes in agricultural circumstances which had occurred since Young's time than with the more immediate purpose of his tour—the cause of the agricultural depression prevailing at the time. From this point of view his work was defective, as he had hardly anything to say about the changes in agricultural circumstances caused by the loss of

[1] As the author says in his concluding remarks, "During a period of high prices moderate rents could be paid without the investment of much capital by the tenant; but low prices and universal competition compel agricultural improvement." Up to a certain limit this is true, and a fall in prices sufficient to render enterprise hopeless had not occurred when Caird's book was written.

Protection. As the depression proved only temporary, Caird's work is all the more valuable for its treatment of the agricultural condition of the country on broader lines than were apparently contemplated when he was sent upon his travels; but still it is to be

OUTLINE MAP ILLUSTRATING ENGLISH AGRICULTURE IN 1850.
(*James Caird, "English Agriculture,* 1850-51.")

regretted that he made no systematic attempt to compare rents, rates, wages, and the prices of farm products in 1850 with those of the period immediately preceding the repeal of the corn laws, or, say, with those of 1840.

It is not surprising to find in the evidence of depression collected by Mr. Caird in 1850 some of the signs with which the crisis of our own times has made us familiar. In some counties farms were thrown on the landlords' hands. For example, the

Duke of Marlborough had over 5,000, acres in hand, the former tenants having been unable to pay the rents, which had been raised about ten years before. The Duke refused to make any abatement, and many of his farms, after being impoverished, were deserted. The country around Blenheim at the time presented a poverty-stricken appearance. As in the depression after 1879, it was the occupiers of heavy clay soils who suffered most severely in 1850; while those who held good light land suitable for green crops and the maintenance of a large number of live stock had less to complain of, and farmers of good pasture were able to hold their own. In the fertile Vale of Aylesbury dairy farming was declared to be the only branch of agriculture which paid at the prices ruling at the time. Butter, in January, was selling at 1s. 2d. a pound. The price at that period of the year had been 1s. 3d. to 1s. 4d. from 1839 to 1847, and 1s. 6d. in 1848. Still, at the reduced price, butter paid, whereas fat cattle were not selling well, and a poor crop of wheat, at the reduced price, was regarded as utterly unremunerative. In some parts of the country the plan of saving expenses adopted so commonly since 1879, that of laying land down to pasture, was carried into effect. Farmers were advised to grow more feeding crops and less corn, as foreign competition in meat and dairy produce was not serious, while corn was coming into the country in increasing quantities. It is true that the imports of dairy produce were even then considerable, 330,579 cwts. of butter and 347,803 cwts. of cheese having been received from foreign sources in 1850; but these quantities were readily absorbed. Meat was not in any form among the principal articles imported.

The Revival.

But the depression was not to last long. The gold discoveries in California in 1848 and in Australia in 1850–51 had begun to tell by 1852, and a rise of prices, with a great development of trade, set in before the beginning of 1853. In that year wheat averaged 53s. 3d. a quarter, barley 33s. 2d., and oats 21s., and the troubles of corn-growers were at an end. This, indeed, was the beginning of one of the most prosperous periods ever enjoyed by corn-growers. The Russian War began in 1854, and the average prices of corn were 72s. 5d. a quarter for wheat, 36s. for barley, and 27s. 11d. for oats. In the following year there was an advance of 2s. 3d. in wheat, and although barley gave way slightly, it rose

above 41s. in 1856, and above 42s. in 1857, the averages for wheat being 69s. 2d. and 56s. 4d. Many farmers made fortunes, and rents went up with a run. In 1858 and 1859 there was a reaction in trade and agriculture alike, following the commercial crisis of 1857, the year of the Indian Mutiny; but 1860 ushered in a period of high corn prices three years in duration.

Ten Years of Prosperity.

Taking all things into consideration, the period of ten years ending with 1862 was probably the most prosperous decade ever enjoyed by British agriculturists. The prices of all kinds of corn together were higher than they had been in any ten years since 1833, and for barley and oats the averages were higher than in the decade ending with that year. The values of meat and dairy produce advanced, and were highly satisfactory during the latter part of the period; while rates were much lower than they were up to 1833. The harvests, too, except in 1853 and 1860, were good or fair. Until the bad harvest of 1860 occurred, the net imports of wheat, including flour, had only once reached 6,000,000 qrs., and had usually been under 5,000,000 qrs. It was probably the great harvest of 1857, when we grew over 17,000,000 qrs. of wheat in the United Kingdom, that caused the fall in the price of wheat to 44s. 2d. in 1858, and the production of only a million quarters less in the following year that produced a further decline to 43s. 9d. in 1859. The great importation of over 10,000,000 qrs. in 1860–61 failed to keep the price from rising, and in 1861 the American Civil War began, and the annual average for wheat ranged from 53s. 3d. to 55s. 5d. during the three years 1860–62. During the rest of the period under review, ending with 1865, the prices of corn were comparatively low; but the harvests were the three greatest to occur consecutively of any known in the present half century. Moreover, meat and dairy produce advanced in value, so that agricultural prosperity may be said to have lasted from the end of 1852 until the end of 1865 without interruption. It is true that the imports of grain, flour, cattle, sheep, beef, bacon and hams, butter and cheese, had recently begun to reach alarming dimensions; but, after nearly twenty years of Free Trade, the prices of these products had not been permanently reduced below a remunerative level, and most of them were high during the greater part of the time, while some advanced considerably towards the end of the period.

The progress of agricultural improvement (pp. 292–297) was

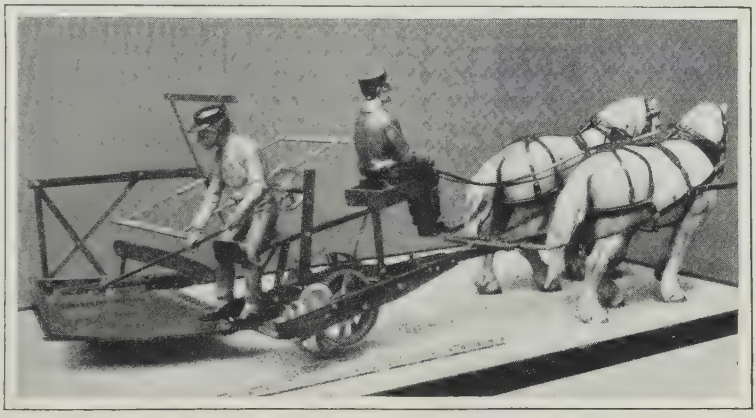
Agricultural Progress.

hardly checked during the few years of depression which followed 1847. Indeed, there is reason to believe that landlords and farmers were aroused by the temporary fall in prices to an appreciation of the need of making the most of the resources of the soil. Before 1846, except in some of the eastern and northern counties, draining and other great improvements had been carried out only by the minority of landlords or tenants. As late as 1850, Mr. Caird found scarcely any tile-draining in progress in several of the counties which he visited. In other counties considerable progress in this useful work had been made, however, and the best landlords were offering tiles to their tenants, or carrying out the work themselves, and in most cases charging interest on the outlay, but not in all. Not a few landlords had recourse to the Government Drainage Loans, introduced by Sir Robert Peel in 1848. The loans were repayable, with interest, in twenty-two annual instalments of $6\frac{1}{2}$ per cent. Usually the tenants were required to pay the whole of the instalments, and to cart the tiles as well, so that they really paid for the whole improvement; and cases were known in which they were charged $7\frac{1}{2}$ per cent. on the loans, their landlords thus deriving a profit while getting their estates improved. The use of guano, bones, and superphosphate was becoming common in 1850, though not in all parts of the country, and nitrate of soda was being introduced by a few advanced agriculturists. In Cheshire the use of bones was said to have doubled the produce of the pastures. There are no statistics by which the increased use of some artificial manures can be measured, as the use of coprolites in making superphosphate superseded imported bones to a great extent, besides affecting the consumption of guano. Still the imports of the latter fertiliser increased from 71,414 tons in 1848, after having fallen off for two years, to 237,393 tons in 1865; and those of bones, not sufficient to be separately enumerated in the Statistical Abstract for 1853, had grown to 74,308 tons by 1865. Nitrate of soda, classed with saltpetre in the earlier year, but apparently under 200,000 cwts., increased to over 1,000,000 cwts. in the later one. With respect to farm crops, all now commonly cultivated were grown in 1845; but mangolds greatly increased in acreage during the following twenty years, and the varieties of corn and roots were improved by selection.

Among the most striking of the advances of the period was

the steady improvement of the implements and machinery of the farm. Messrs. Howard and Ransome, to mention only two of the most prominent of many makers, vied with each other in the construction of ploughs for different classes of soil, diminishing the draught and increasing the efficiency of this ancient implement of husbandry. The same firms introduced improved harrows, while Coleman and Crosskill became known

Machinery and Implements.



MODEL OF McCORMICK'S REAPER.
(*Victoria and Albert Museum.*)

for their cultivators, and the latter for farm carriages of admirable construction, as well as for his famous clod-crusher.[1]

Reaping machines were mentioned as early as the days of Pliny, who describes a Gallic machine which, curiously enough, was of a type now regarded in the United States and some of our colonies as the cheapest of all corn-collectors to work, and known as the "header," as it merely strips the ears off the straw. But although from 1812 onwards numerous attempts were made to construct an effective reaping-machine, and, as early as 1826, the Rev. Patrick Bell brought out one which did good work, it was not until many years later that corn was at all commonly cut by machinery. The Americans were the first to improve upon Bell's

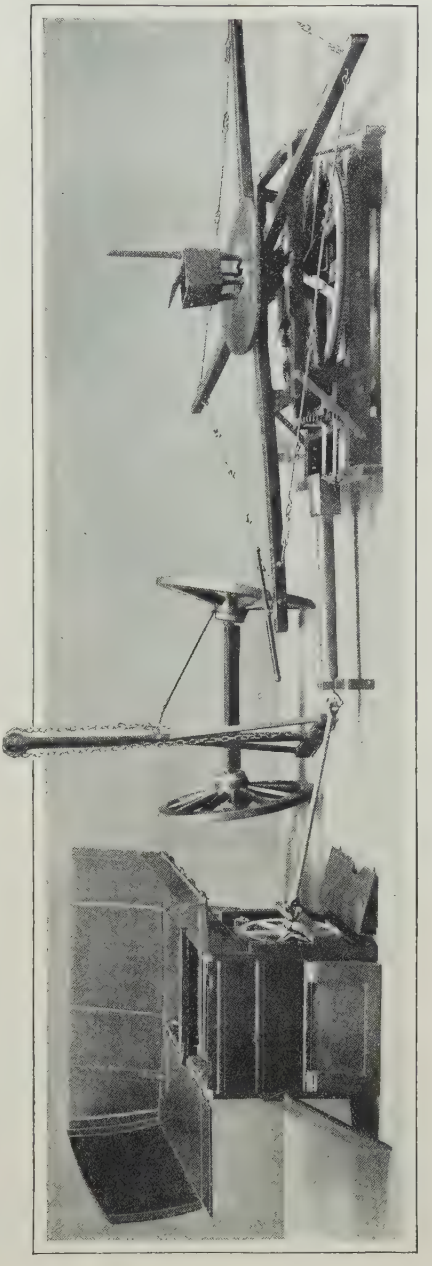
[1] Among the many names that appear in reports of agricultural shows, those of Boby, Garrett, and Hornsby may be noticed as improvers of corn-dressing machines; Smyth and Garrett for drills; Samuelson, Ransome and Bentall for root-cutters and cake-breakers; and Richmond and Chandler, Turner, Picksley, and Bentall among a crowd of manufacturers of chaff-cutters.

machine, though McCormick's adaptation of it, shown here in 1851, was not considered an improvement for use in this country. In 1852 Messrs. Crosskill, of Beverley, acquired the right to make Bell's reaper, and greatly improved it, taking the prize of the Royal Agricultural Society for it in 1853. It was first a two-horse machine, but was widened in 1860, and three horses were then needed to work it, driving it in front of them. It became extensively used, and was the reaper most commonly to be seen at work until after 1872, when Samuelson's one-horse machine came into notice. By 1876 one-horse and two-horse machines by Samuelson, Hornsby, and other makers had superseded the effective but cumbrous Beverley reaper, which left the corn in swaths, while they left it in bundles ready for binding in sheaves.

At the Chester show of the Royal Agricultural Society in 1858 there were over forty threshing-machines, most of them worked by steam, competing for the prizes offered by the society, most of the names of competitors being familiar as those of makers at the present day. The advance in the use of steam threshing-machines must have been very rapid, as it was not at all common in 1850. The successful introduction of steam cultivation was of later date, although it had been attempted many years before. In 1834[1] the Marquis of Tweeddale suggested that a liberal prize should be offered for an effective steam plough. The suggestion was not adopted till 1837, when the society offered a premium of £500 for the successful application of steam power to the cultivation of the soil. In the same year an invention by Mr. John Heathcoat, M.P., was tried, and found to succeed in moss soil, but not on ordinary land. This steam plough came to an untimely end, as it disappeared in the night following a trial, having sunk in the moss. The society's premium was repeated until 1843, when it was withdrawn. In 1851 and 1852 a premium of £200 was offered, but not won, although a rotary cultivator patented by Mr. John Usher, of Edinburgh, did such good work that it came near the winning point. It was renewed in 1857, when Mr. John Fowler, jun., of London, was the only maker to enter for trial. His plough, drawn by a single engine, with an anchor, was awarded the prize. In the meantime several other steam

[1] Ramsay, "History of the Highland and Agricultural Society of Scotland," p. 433.

ploughs or cultivators had been patented, but only three came to the test of a competition at Chester in 1858, when the Royal Agricultural Society offered a prize of £500, which was won by Fowler. In 1856, Smith's cultivator had been tried successfully at Chelmsford, in connection with the Royal Show, in the presence of crowds of spectators, and from that year Mr. Smith worked his own land by steam up to the end of his occupancy of his Woolston farm. He may therefore be regarded as the pioneer of successful steam cultivation, although he was beaten by Fowler's single-engine system in 1858; and the same maker's double-engine system, with balance plough or cultivator, came most of all into use later on. In 1859, Mr. J. A. Clark, in the Royal Agricultural Society's Journal, gave a list of thirty-eight landowners and farmers in the United Kingdom who were using Smith's steam cultivator, and another list of thirty-five persons who were either using or about to use Fowler's steam plough. Further improvements took place before the great trials of 1864 at Newcastle were



PORTABLE HORSE-POWER THRASHING MACHINE.
(*Victoria and Albert Museum. By permission of Messrs. Garrett & Sons.*)

held, when some new makers were in the field, and the work done by several of the competitors was highly satisfactory.[1]

Farmers' Clubs.

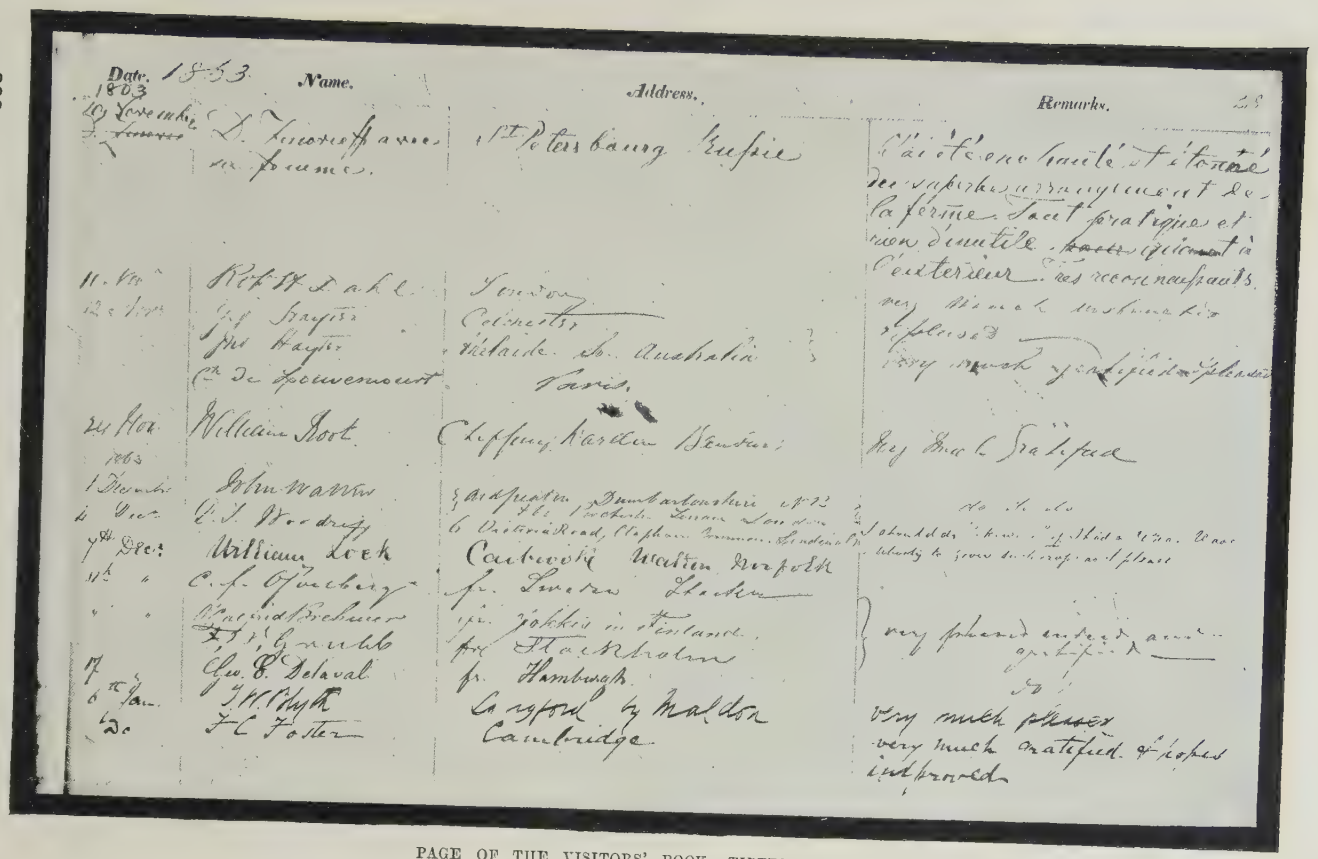
In these times many agricultural societies were organised, and began to hold annual shows of live stock and implements. The farmers' clubs, too, were in the height of their prosperity, and their discussions of points in farming excited a great deal of interest. There was more hope in the profitableness of new methods than there has been in later times. Old-fashioned farmers, who still formed the majority of their class, derided the "new lights" and the "book farmers," but were often induced, by little and little, to follow the lead of those whom they affected to despise as teachers. One of the most beneficent of associations, the Royal Agricultural Benevolent Institution, was founded in 1860.

J. J. MECHI.
(*From his "How to Farm Profitably,"* 1864.)

During the prosperous period for trade and agriculture alike, many men who had made money in commerce were attracted by their love of country life and their faith in the possibilities of scientific agriculture to rent land, and their competition for farms had a considerable effect in raising rents. Mr. J. J. Mechi was the most notable of the "apron-string farmers." He purchased Tiptree Hall Farm in 1841, and spent a great portion of the fortune he had gained in commerce in improving his property. He was an enthusiastic advocate of the application of science and the

"Apron-string" Farmers.

[1] Landowners and farmers who were conspicuous as agricultural improvers were so numerous that it seems almost invidious to select names for special mention. Among them in England were Mr. Philip Pusey, Mr. J. J. Mechi, the Earl of Leicester, Sir Robert Peel, the Duke of Portland, the Duke of Bedford, Mr. John Walter, Mr. Hudson, Mr. Fisher Hobbs, Mr. Hutley, Mr. James Webb, Mr. H. Overman, Mr. Chaplin, the Earl of Yarborough, the Duke of Newcastle, the Earl of Derby, the Duke of Wellington, Lord Sefton, Sir James Graham, Earl Grey, Lord Vernon, Earl Spencer, Sir John Conroy, Mr. Paget, Mr. Torr, Mr. Huxtable, Mr. Beasley, Mr. Wells, Mr. Outhwaite, Mr. Morton, Mr. Thomas, and Mr. Williams of Baydon, who was a notable pioneer in steam cultivation.



Date. 1853	Name.	Address.	Remarks.
10 June 1853	L. Tolstoff Comte de Tolstoy	St Petersburg Russie	C'est étonnant et étonné des superbes arrangements de la ferme. Tout pratique et rien d'inutile. Rien également à l'extérieur. Les accommodements.
11 Nov	Robt H. Dakl	London	very much pleased
12 Nov	G.F. Boyce	Colmerton	pleased
	Jno Boyce	Adelaide S. Australia	very much gratified & pleased
	Cte de Lavenencourt	Paris.	
24 Nov 1853	William Cook	Clapham Park Common Surrey	Very much gratified
1 Dec	John Warren	Aberdeen Dumbartonshire N.B.	do do do
4 Dec	C.S. Wardrop	6 Victoria Road, Clapham Common. London	Island of Ithaca Greece. Never already to grow turkeys as pleased
7th Dec	William Cook	Cambridge Western Depôt	
11th "	C.F. Oxenberg	Jr. Sweden Stockholm	
" "	Reginald Brehmer	Ipr. Jokkis in Finland.	very pleased entertained and gratified
	F.J. Grubb	for Hamburgh	
	Chs. P. Delaval	Jr. Hamburgh	
17	J.W. Blyth	Langford by Maldon Cambridge	very much pleased
6th Jan.	F.C. Foster		very much gratified & hopes indebted
Do			

PAGE OF THE VISITORS' BOOK, TIPTREE HALL.

(*MS. Add.* 30,015.)

latest mechanical inventions to agriculture, and equally eager in denouncing slovenly methods of farming. During his long career he did much good, although he made not a few mistakes in the application of theory to practice. He was denounced by many farmers for raising rents by showing landlords what could be made of land by judicious improvement, and his annual balance-sheets were keenly criticised. But his hearty geniality made friends of those who came in contact with him, and there was widespread regret when misfortunes not connected with his farming almost ruined him; while the esteem of those who knew him was heightened by his honourable assumption of liabilities for which he was not wholly responsible.

Larger Farms.

The consolidation of farms was one of the features of the prosperous times which followed the depression of 1849–51. As men of little capital were constrained to quit their holdings, their land in many cases was acquired by prosperous neighbours, and thousands of farmhouses were converted into dwellings for bailiffs or labourers, the land being farmed off-hand. In some instances small farms were purchased by farmers, and for a time the steady decrease in the yeomanry was checked, but not for long.

Stock-Breeding.

During the period under notice the improvement of live stock received a great impetus by the multiplication of agricultural shows, and by the fashion of breeding pedigree animals, which grew up among landlords and other wealthy men. In the breeding of Shorthorn cattle especially, what was called the "pedigree mania" came into great prominence, and fancy prices were realised for animals of particular tribes, quite beyond their intrinsic value. Some harm was done by the rage for pedigree as distinct from merit; but, on the whole, the "mania" did good by attracting an immense amount of capital to the industry, and by spreading offshoots from the crack herds all over the country. Great attention, too, was paid to the improvement of horses, sheep, and pigs. Some of the most valued of existing breeds of sheep became widely known during the period, although founded by the crossing of older breeds at a somewhat earlier time. It was not until 1853 that the Shropshires were deemed of sufficient importance to be recognised as a distinct breed by the Royal Agricultural Society; and the Oxfordshire Downs became known by that name as recently as 1857. The Suffolks,

although an old breed, were not sufficiently improved until after 1865 to attract attention outside the eastern counties.

Noted Breeders.

The Booth family and Mr. Thomas Bates carried on the work of improvement with Shorthorn cattle, which the brothers Colling and Sir Charles Knightley had pursued with remarkable success. Mr. Bates died in 1850; but members of the Booth family carried on their successful breeding career for a great number of years, and long after the period under review. Among other noted breeders of Shorthorns in the early part of the period Sir Charles Knightley (whose career as a Shorthorn improver extended from 1826 to 1856), Earl Spencer, and Colonel Townley, may be named. Later on they became too numerous to mention in a condensed account. Messrs. Quartley and Mr. George Turner were among the famous improvers of Devon cattle in 1850. Although Hereford cattle had made great progress in the hands of Tomkins, Price, and others early in the century, it was not until 1846 that the Herd Book of the breed was started by Mr. Eyton, of Somerville, Shropshire. It was taken in hand later by Mr. Thomas Duckham, who edited the first volume containing anything like a complete record of the principal herds in 1858. From this time forward the breed grew rapidly in reputation, not only in England, but also in many foreign countries. In Scotland Hugh Watson and William McCombie were the most famous of the early improvers of Aberdeen-Angus cattle. The Sussex, Ayrshire, and Channel Islands breeds received great attention; but it is impossible to notice all the men who took a prominent part in their improvement. This remark may also be applied to the numerous improvers of horses, sheep, and pigs.

Agricultural Science.

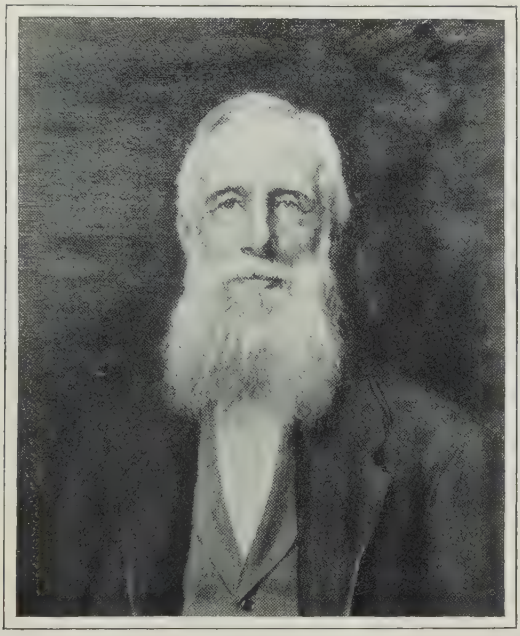
Liebig and Boussingault were the great names in 1846 in relation to agricultural science, and their teachings were popularised in this country by Johnstone and Voelcker, although there was much in Liebig's works to which English chemists, as well as the great Frenchman named above, were opposed. That Liebig carried his mineral theory to a great extreme was demonstrated by Boussingault, and later and more completely by Lawes and Gilbert. whose systematic experiments at Rothamsted were commenced in 1843, to be continuously carried on up to the present day (p. 264). In his "Natural Laws of Husbandry," published in 1863, Liebig still maintained that a loss of nitrogen in the soil would be more readily restored by natural agencies than

a loss of mineral ingredients, upon which plants feed in part; but by this time the Rothamsted field trials had conclusively proved the fallacy of that theory. Ville, in France, in 1849–52, carried out some experiments from which he concluded that plants grown in closed vessels accumulated nitrogen, obtained from the air. In 1855 Mené and Hartig published adverse results. Later on Hellriegel and Wilfarth demonstrated that leguminous plants, by means of minute organisms in the nodules on their roots, appropriated the nitrogen of the atmosphere, and their results were afterwards confirmed by Lawes and Gilbert. But no support has been given to Ville's theory in relation to non-leguminous plants. The Rev. W. L. Rham, who died in 1843, was one of the most instructive writers on agriculture, whose works popularised agricultural science during the period under notice. His principal work, "The Dictionary of the Farm," is valuable even at the present day. It was published as a collection of articles contributed by him to Knight's "Penny Cyclopædia," the last of which was written only a few weeks before his death. A new edition, with articles added by Dr. Lindley on planting, by Youatt on live stock, and by the Rev. Mr. Hickey on potatoes and poultry, appeared in 1850. Dr. Lindley was editor of the *Gardener's Chronicle and Agricultural Gazette*, and many of Mr. Rham's agricultural articles appeared in that journal; others, including a prize essay on the analysis of soils, being published in the Journal of the Royal Agricultural Society, with which body he was associated from its foundation in 1838. He also published "Flemish Husbandry," for the "Farmers' Series" of the Library of Useful Knowledge. Youatt, the famous author of "The Complete Grazier," a work much more comprehensive than its short title indicates, died in 1847; but his works were among the most popular of the agricultural treatises studied during the period under notice, and repeated editions of the one named have been published. Henry Stephens, author of "The Book of the Farm," three editions of which were published by 1867, helped to popularise scientific agriculture.

Agricultural Education.

The systematic teaching of scientific agriculture had hardly begun at the end of the period under notice. The Agricultural College at Cirencester, founded in 1845, was the only institution of its kind in England, and nothing besides the Chair of Agriculture at Edinburgh University, established in 1790, was known in

Scotland. In Ireland agricultural classes in elementary schools were started soon after the famine of 1846–47, only to prove failures, while the excellent Institution at Glasnevin, near Dublin, established in 1838 as an agricultural school for National School teachers, was reorganised in 1852, when the existing buildings were erected. Prince Albert, when visiting Ireland, showed so



SIR JOHN LAWES, BY H. VON HERKOMER, R.A.
(*By permission, from the Journal of the Royal Agricultural Society.*)

much interest in the model farm that it was named the Albert Farm. Agriculture was a special subject taught at a few country schools towards the end of the period or shortly afterwards, and it must be mentioned that the Rev. W. L. Rham had long before (in 1835) begun to teach the elements of practice with science in the school which he established at Winkfield, in Berkshire.

Scottish Agriculture.

In all the improvements mentioned previously as having taken place between 1846 and 1865 Scotland was in the van. In 1848 the Duke of Buccleuch proposed the establishment of a Chemical Department of the Highland and Agricultural Society

of Scotland, which was founded in 1784. The department was formed in 1849, and devoted itself to investigations in the chemistry of agriculture. Great attention was paid to the improvement of live stock, including Clydesdale horses. The Highland Society for some years before 1846 had encouraged the breeding of Shorthorn cattle in Scotland, and Scotch Shorthorns had acquired a high reputation before 1865. Mr. A. Cruickshank, Mr. Thomas Chrisp, and the Duke of Buccleuch were among the most successful exhibitors of the breed in 1852. By this time the Aberdeen-Angus cattle, in the hands of Mr. McCombie and others, had been considerably improved, and the Ayrshires and Galloways were receiving careful attention. Some breeds of sheep were well managed; but little had been done with the Blackfaced breed. There were few really good cheesemakers in Scotland at this time, and in 1854 a deputation was sent by the Ayrshire Agricultural Association to visit some of the cheese dairies of England. The members saw Cheddar made in the famous dairy of Mrs. Harding, in Somerset, and they recommended the Cheddar system, then hardly known in Scotland. In 1855 Mr. and Mrs. Harding were invited to Ayrshire to teach the dairy farmers of that county and neighbouring counties, and this was the foundation of the Scotch Cheddar cheese industry, which has since become one of considerable importance. At a later date the Canadian system of making this cheese was adopted under a famous Canadian instructor. There was no marked progress in butter-making until a much later time. Indeed, the cured butter for which the northern counties of Scotland were noted in 1850 was said many years later to have deteriorated. From 1853 to 1857 agricultural statistics were collected in Scotland for the Board of Trade through the agency of the Highland Society; but a dispute arose in the latter year, and the arrangement lapsed. It was not until 1866 that the statistics were collected through the officers of the Inland Revenue. Great attention was paid in Scotland to the improvement of turnips, with excellent results. Under the system of nineteen years' leases, rents rose steadily in Scotland. Speaking at Inverness in 1865 the Duke of Argyll referred to estates which had increased in value from less than £6,000 to nearly £70,000 during the preceding hundred years. But a century is a long

period, and presumably the enormous increase occurred chiefly during an earlier portion of it rather than in that now under consideration. Between 1846 and 1865 the value of "lands" as assessed to income tax in Scotland rose from £5,509,014 to £6,830,639.

Irish Agriculture.

The famine of 1846–47 led to the ruin of a large number of tenants in Ireland, and their transference from the good cultivated land to the mountains and the margins of bogs. In their old

THE ROYAL AGRICULTURAL COLLEGE, CIRENCESTER.

places numbers of Scotchmen were installed in consolidated holdings, and the farming of Ireland was improved by the change, while native farmers were impoverished. In 1848 the Encumbered Estates Act was passed, with unsatisfactory results (p. 515), and in the same year the Irish Tenants' League was formed for the purpose of extending the Ulster custom of Tenant-Right to the rest of Ireland. The Landlord and Tenant Act of 1860 was not a response to this demand, but mainly a measure framed to base tenancy on contract, instead of upon custom or service. It had no considerable effect beyond making evictions more easy. This was the first of a long series of measures intended to put the relations of landlords and tenants in Ireland upon an improved footing; but nothing of importance was done during the period under notice. The wretched condition of the peasantry produced agitation and wholesale emigration, and

the Irish Land Question became a permanent trouble to Parliament, and a subject of inquiry by Royal Commissions. In spite of all, however, Irish agriculturists shared in the prosperity of their British neighbours during the decade ending with 1862, while the practice of farming improved, and rents advanced. Unfortunately the potato-disease, which had ruined thousands of tenants, had "come to stay," and distress recurred amongst the small occupiers with every bad season.

A Bad Finish.

In the last three years of the period the prices of corn fell seriously, the difference in respect of wheat between the averages of 1862 and 1863 being over 10s. a quarter. In 1864 wheat fell further to 40s. 2d. a quarter, and barley to 29s. 11d., while oats were reduced less seriously in value, selling at 20s. 1d. In 1862 the averages had been 55s. 5d., 35s. 1d., and 22s. 7d. But the crowning catastrophe remained for the year 1865, when Rinderpest, or Cattle Plague, was introduced into the country from Russia. We were quite unprepared to deal with this terrible disease, and consequently it spread without check through the country, causing an enormous amount of loss. In October, 1865, a Royal Commission commenced an inquiry into the origin, nature, and best method of encountering the fatal disease, and was sitting at the end of our period, nothing effectual having been done to stay the progress of the plague.

J. E. SYMES. The New Era in Economics.

THE adoption of Free Trade was followed by a great expansion of English commerce and wealth, but this expansion was temporarily delayed by the financial crash of 1847. Its history bore a great resemblance to that of the other decennial crises, which occurred with such regularity between 1826 and 1866. First came a series of good harvests in 1842, 1843, and 1844. This led to a great accumulation of capital, partly through agricultural prosperity, but chiefly because other classes of the community, being able to buy food cheaply, had money to spare for industrial and commercial enterprises. The development in railway and steamship communication operated in the same direction, for a saving in time is a saving in money, and the capital sunk in railway extension was now bringing in its returns. There was so great a glut of capital that the market rate of discount in 1844 sunk as low as one and three-quarters per cent. Then came the turn.

The failure of the Irish potato crops in 1845 and 1846 synchronised with bad English harvests, and an outburst of railway speculation (pp. 286, 311, 337). Thus prices were pushed up in two very different ways, and capital was locked up just when it was beginning to grow scarce. In April, 1847, the rate of discount on the best bills rose to ten and even twelve per cent., and in May the price of wheat touched one hundred and thirty-one shillings. Crisis of 1847.

SCARCITY OF CURRENCY IN 1847.

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There was an immediate rush to wheat importation, which reached such dimensions that the market was swamped and the importers were ruined. On the 9th of August the crash began, and in three weeks there were failures to the amount of over three million pounds. At first it was only the grain importers who stopped payment, but their fall dragged down the brokers who had made advances to them, and this spread the ruin to other houses till the failures exceeded fifteen million pounds. Extravagant credit had been given in the good times of 1845 and 1846, and now everyone was trying to realise, partly from the fear that his debtors might fail, and partly in fear of pressure from his

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creditors. The Bank of England raised its rate and refused loans. Other banks hastened to sell their securities, and there were many failures among them, more especially in Manchester, Liverpool, and the North-West of England. At length, on October 25th, 1847, the Government advised the Bank of England to advance loans freely on good security at a high rate of interest, and promised that if it became necessary to exceed the limit of issue laid down in the Bank Act, Parliament should be asked to pass a Bill of Indemnity. As soon as this was known the panic subsided. The Bank Act, though suspended, was not violated. The mere knowledge that the directors had power to disregard it restored confidence to those houses that could offer good security, and the others had been by now, for the most part, swept away. The panic was over, but, as usual, it ushered in a period of depression, of general want of confidence and enterprise, and a consequent lack of employment.

Chartism Revived.

This state of feeling, combined with the spread of revolutionary ideas on the Continent, and especially in France, naturally tended to a revival of Chartism in England. The distinctive feature in the French Revolution of this year was the prominence of Socialistic ideas; and their triumph helped to re-awaken Socialist hopes in the minds of the more pronounced English Radicals. The Chartists formed what they called a National Convention, and used language so violent, at meetings so largely attended, that many well informed and intelligent people believed that England was on the verge of a revolution. As a first step Parliament was to be given a last chance of passing the Charter. A monster petition was to be presented by a vast mob who were to assemble at Kennington Common and to march down to the Houses of Parliament. This procession was prohibited, but the "physical force" Chartists were only the more determined to hold it, and they believed that the result would be street struggles and barricades, with a revolution as the outcome. The upper and middle classes were seriously alarmed, and the Duke of Wellington made elaborate military preparations. Two hundred thousand persons enrolled themselves to act as special constables against the Chartists. But the majority of the latter, however, shrank from the responsibility of appealing to force. A few thousands only assembled on Kennington Common, and, even of these, many were only attracted by curiosity. It was clear

that there was no chance of a revolution. The monster petition said to contain more than five million signatures, was presented to Parliament; but, when it came to be examined, it was found that the nominal signatures were little more than two millions in number, and that of these a large proportion were fictitious. The names of such illustrious persons as the Queen, Prince Albert, and the Duke of Wellington appeared again and again, and many purely humorous signatures had been appended by mischievous schoolboys and others. There was a reaction in the public mind from unreasonable terror to equally unreasonable contempt. Chartism was, in reality, no matter for ridicule. It was deeply rooted in misery and discontent, but, widespread as these were, there was no real danger of a revolution, and the commercial prosperity of 1853 to 1856 helped to mitigate the bitterness and despair of the poor. The name of Chartism became little more than a memory, but the facts which that movement had represented were embodied in few forms.

The Ten Hours Act.

From 1848 Chartism passed into comparative insignificance. The great revival of trade, of which we will speak later, contracted the area of misery and unemployment. The Factory Acts, Free Trade, and the New Poor Law were beginning to produce their beneficial results. The first of these had received an addition through the Ten Hours Act of 1847, which restricted the work of women and young persons engaged in textile factories to ten hours a day, between six a.m. and six p.m. They were not to be employed after two p.m. on Saturday. The principles of the Act were applied to other trades by a series of statutes between 1860 and 1864; and the restrictions practically introduced the same limit in the case of adult men in many industries. Free Trade, also, was extended by the abolition in 1849 and 1854 of all that remained of the Navigation Acts.

Trade Unionism.

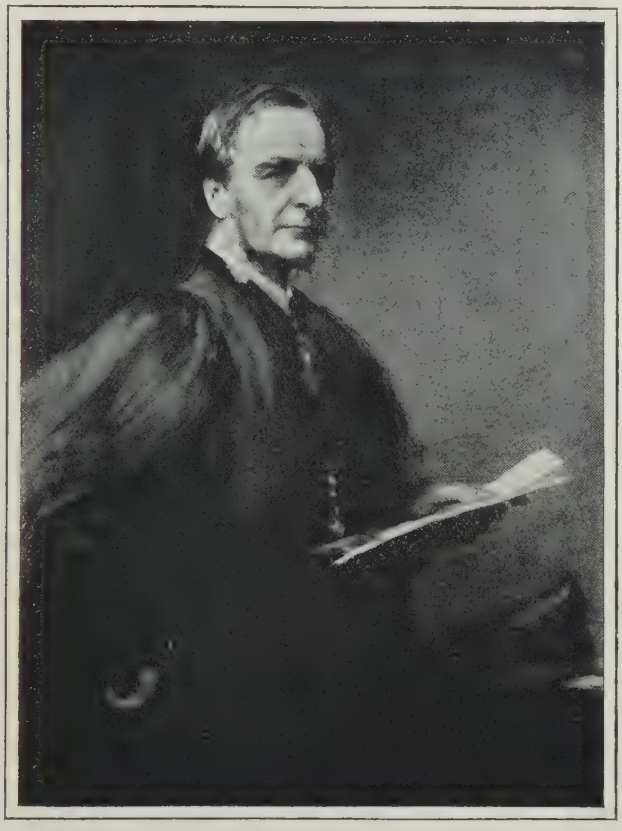
But, above all, the more intelligent of the working classes were beginning to realise how much they had it in their power to do for themselves by means of their unions and without the help of Parliament. The need of more thorough and accurate knowledge of economic subjects began to be felt, and some of the unions devoted a portion of their funds to mutual improvement classes and the purchase of books. Their leaders began to denounce strikes, and to point out the need for more education both general and technical. Meanwhile the growth and

increasing complexity of the administrative work of the unions provided sufficient scope for the energies of the more clear-headed and practical-minded of their leaders.

The Amalgamated Engineers.

In 1848 a Manchester Engineering Society had 7,000 members, and a capital reserve fund of £27,000. It was admirably organised and financed, and in 1850 it was merged in a still larger and more famous society. There had been many opponents of the amalgamation, and during the process many of the old members seceded; but, by October, 1851, the Amalgamated Engineers could boast a muster roll of 11,000 members, all paying a shilling a week to the funds of the society. Their first great battle was fought over the question of piece-work and systematic overtime. The men suggested arbitration, but the masters would not consent, and on January 10th, 1852, every important engineering firm in London and Lancashire stopped work. The little band of Christian Socialists, whose leaders were F. D. Maurice and Charles Kingsley, exerted themselves to secure public sympathy and support for the men. A large part of the working classes, and no small number of the well-to-do, rushed into the contest, and considerable subscriptions were raised; but the employers were too strong, and, after a three months' struggle, the men were defeated. Their defeat did not shake their allegiance to their society, and it became a pattern on which many of their later national societies modelled themselves. For "benefit" purposes the society consisted of a number of local branches, practically self-governed, but subject to a general code interpreted by a central executive committee. But, for fighting purposes, power was centralised in the hands of this executive. They rigidly restricted membership to duly qualified men in the trade, and banished from their programme the vague general philanthropy which had characterised the earlier movements, more especially during the dominance of Robert Owen's influence. The unions now made it their prime business to advance the interests of their own trade, and left other people's interests to be looked after by other people. Occasionally, however, they gave liberal help to other unions engaged in contests with the objects of which they were in sympathy. Within ten years of the great strike the engineers had doubled their numbers, and had accumulated £73,000. With such financial interests at stake the union leaders became anxious to avoid strikes, and between 1852 and

1858 there were comparatively few of these, and none on a large scale. In 1859, however, there was a great strike in the building trades of London in favour of shortened hours of labour.



THE REV. CHARLES KINGSLEY BY LOWES DICKINSON.
(*Magdalene College, Cambridge.*)

The Builders' Strike, 1859.

Twenty-four thousand men were locked out. Public sympathy was roused for the men. The Amalgamated Engineers contributed three successive weekly gifts of £1,000, and much other help was forthcoming. This time the battle ended in a compromise, one result of which was the formation of the Amalgamated Carpenters' Society, and of the London Trades Council.

The Trades Council.

The forming of the latter marks a new departure in the history of industry. The leaders of trade unionism were once more feeling the need of some organisation, not restricted to a single trade or group of trades. Some of those who had co-operated to help the builders decided to form a permanent council, representing various distinct trades, which should be an organ of inter-communication, and a channel of mutual help. The Council held its first meeting on July 10th, 1860, and, at about the same time, provincial Councils began to be formed, with the same general objects, in many of the large towns. Another new departure was a revived political activity As soon as the chief separate trades were fairly efficiently organised, the need of common political action began to be felt. Men found that, as unionists, they were keenly interested in the movement to extend the franchise, and thus to secure increased political power for their own class. They were anxious to extend the Factory Acts, and to do away with the little that remained of legal impediment to combination. Gradually they began to take part even in those political matters which had little, if anything, to do with definite trade interests. Thus, the London Trades Council took an active part in the popular welcome to Garibaldi, and in a meeting to show sympathy with the Northern States of America. Many trade unionists protested against this tendency, which seemed to them to savour too much of sentiment, but the general feeling, among the leaders at any rate, was in the other direction.

The Co-operative Movement.

Meanwhile the Co-operative movement had fairly started on its victorious career. Its original object was essentially ethical. The word was primarily used as an antithesis to competition, and Co-operation was rather a faith and a principle of life than a mere system of profitable shopping and store-keeping. Robert Owen (p. 304) may be said to be the founder of the English Co-operative movement. Before his ideas had taken a democratic turn he had aimed, in New Lanark, at fighting the evils of competition by making the national and social conditions of the workmen his first care. The relation of employer to employed was to be one of co-operation; for the advantage of each would involve the advantage of the other. Owen, in his earlier days, believed that the social problem could be solved by competent and benevolent captains of industry, but experience convinced him that this was impracticable. Next, he looked to the State to

organise co-operative communities. Only very gradually did he come to believe that the workers must create for themselves some system which would dispense with employers; and he never attained to any firm conviction of how this was to be done. The provision shop, which he ran without profit at New Lanark, suggested to some of his disciples the idea of founding co-operative shops by means of £1 shares. Owen himself, however, took little interest in this, and seems to have feared that it might withdraw men from the pursuit of the social millennium. Other experiments followed, but these were initiated for the most part by philanthropic people for the benefit of the working classes.

The Rochdale Pioneers.

At length, in 1844, twenty-eight Rochdale men started a business for themselves, with a capital of only one pound each, and that slowly saved up, often at the rate of twopence a week. This was the first store which successfully solved the problem of eliminating the shopkeeper from a shopkeeping business.

This seems to be the distinctive feature of what is called *Distributive Co-operation.* The other points on which the Rochdale Pioneers insisted are not essentially co-operative. Supplying only the best goods, giving full weight, allowing and asking no credit, were, no doubt, important features in their success, but there is nothing in them inconsistent with ordinary shopkeeping, whereas the democratic management and the division of profits among members and customers were the essential characteristics of the Rochdale experiment. The progress which it made during the period dealt with in this chapter is indicated by the following figures:—

Year.	No. of Members.	Business.	Profits.
1845	74	£710	£22
1855	1,400	£44,906	£3,109
1865	5,326	£196,234	£25,156

Co-operation, 1845-1865.

The success of this Society naturally led to the formation of others more or less on the same lines. Some were successful; others failed. The varying results were largely due to the degree of competence attained in their management; partly to good or bad luck; but, broadly speaking, it may be said that no great success attended any form of co-operative production during this period. The principle of dividing among labourers as such, *i.e.* in some sort of proportion to the results of their labour, was altogether dropped in many cases, and only carried out to an

inconsiderable extent in others. The workman might profit by investing his little capital in the store, by obtaining good and cheap provisions, in addition to a share in the dividend proportional to his purchases; but the success of such stores has done little to show the feasibility of schemes to enable the worker, as such, to gain an increased share in the product of his work. Co-operative workshops, started with this idea, generally either failed or abandoned the principle, and became merely joint stock concerns, in which the stock was held by workmen. This was the case, even in the mills set up by the Rochdale Pioneers. The original idea was to allow the shareholders five per cent., together with half any further profits, leaving the rest to be divided among the workmen; but this scheme was soon abandoned, and the mills were henceforth conducted as joint stock companies.

The Co-operative movement, though it owed its success mainly to workmen co-operators themselves, had many useful allies and champions among other classes. The Christian Socialists warmly supported the movement, though they felt that it fell far short of their ideal. One of their number, Mr. E. V. Neale, rendered specially useful service by drafting and carrying through the Bill for the amendment of the Industrial Societies Act, which gave full legal protection to the funds of the stores and removed various restrictions under which they lay. This gave a great stimulus to the movement, and by 1865 there were 124,659 members of co-operative societies, whose sales amounted during the year to £6,001,153.

Growth of Trade.

The progress of Trade Unionism and Co-operation during this period, was, no doubt, partly due to the steady increase of national wealth, which made it possible for the working classes to improve their position. This progress in wealth was undoubtedly largely due to the adoption of the Free Trade system. In 1851, when much had already been done in this direction, our imports were valued at one hundred millions, and our exports (including re-exports) were under seventy-five millions. By 1856 these figures had risen, the imports to over one hundred and seventy-two, and the exports to one hundred and sixteen millions. By 1865 they had exceeded what appeared to be the marvellous amounts of two hundred and seventy-one and one hundred and sixty-five millions. In other words our imports had nearly trebled, and our exports more than doubled in fifteen

years. The statistics of foreign trade are, no doubt, imperfect evidences of general material progress, but all the facts and figures at our disposal confirm the belief that England's wealth was increasing with extraordinary rapidity.

The progress was, however, not unbroken. The year 1857 brought another of those crises and panics, which appeared to

THE AMERICAN CRISIS OF 1857.
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recur at regular decennial periods. There had been such crises in 1826, 1836, and 1847. Since this last date the country had gone through the regular cycle. The panic had been followed by several years of depressed trade, during which wages were low, employment scarce, and profits on capital insufficient to tempt enterprise. Gradually, however, confidence revived, and men were more prepared to stake the slow accumulation of the bad years. The Crimean War (1854–56) gave an artificial stimulus to trade, and in 1855 confidence passed far beyond the bounds of prudence. Credit began to be recklessly given. Many large

The Crisis of 1857.

operators kept practically no reserve, trusting to the Bank of England to help them. A wave of excessive railway speculation in America helped to swell the general excitement, and in 1856 the crash began in the United States. It was found that many companies had been paying dividends which they had not earned. There was a panic in New York, in which sixty-two of the sixty-three banks in that city stopped payment. Thus the English crisis was precipitated. Firms with large American dealings began to totter. Failures in Liverpool and Glasgow reacted on London. Failures in one trade brought disaster to others. There followed a repetition on a large scale of the scenes of 1847. The bank rate went up to nine per cent., but the reserves nevertheless sank so low that the Bank of England would have had to stop payment on November 13th, 1857, but for the suspension of the Bank Charter Act. Under this suspension the Bank issued nearly a million pounds in notes in excess of the ordinary legal limit. This shows that the crisis was even more intense than that of 1847 (p. 489). With the suspension of the Act and the raising of the rate the panic soon passed away, and indeed confidence revived somewhat sooner than had been the case in the previous crises.

Limited Liability.

This revival of confidence was greatly encouraged by the new facilities given to trading, with only limited liability, under the Act of 1862. This Act made it easy for any seven or more persons to be incorporated with or without limited liability, and with various special privileges. The result was an extensive formation of joint stock companies, many of which were of a dishonest or dangerously speculative character; but there can be no doubt that the Act led also to a great development of legitimate trade.

More Free Trade, 1853–1860.

In spite of the reforms of Huskisson and Peel (pp. 121, 163, 310) our system of Customs was still very complicated, and in many ways Protective. It was reserved for Gladstone to complete the edifice of which Huskisson had laid the foundation, and towards which Peel, in abolishing the corn laws, had contributed the most important part. Gladstone's Budget of 1853 freed no less than one hundred and twenty-three different kinds of goods from Customs duties, and reduced the rates on one hundred and forty more. Its first principle was that Customs duties should only be levied for purposes of revenue, and in no

degree for the protection of native industries. Unproductive duties were, therefore, to be swept away. Secondly, a great reduction was made upon articles of food which were of general consumption, such as tea, butter, eggs, apples, cheese. Thirdly, all duties upon half-manufactured goods were to be abolished. Fourthly, a great simplification was introduced by getting rid, to a great extent, of differential and *ad valorem* duties. Even these sweeping changes were intended only as another step towards thorough Free Trade. The Crimean War necessitated the delay of further reductions and abolitions of duties, but in 1860 the work was resumed. The Budgets are too elaborate to be explained in detail here, but, by way of summary, it may be mentioned that under that of 1842 no less than 1,052 kinds of articles paid duty. By 1853 the number had fallen to 466, and by 1860 to forty-eight. Between that year and the end of our period the reduction had been carried further. The Free Trade principle is that so-called "Protection" injures instead of protecting. If other people damage us by taxing our exports, that is no reason why we should damage ourselves still further by taxing theirs. Accordingly, when England in 1860 made a Treaty with Napoleon III., she was really conceding nothing, but merely carrying her own principles one step further, and purchasing one advantage at the cost of obtaining another. The same thing held good of Napoleon. He was genuinely convinced that France would benefit by opening her ports more freely to English exports, but this view was by no means popular in France. It was, therefore, necessary to secure support, by making the relaxation nominally compensated for by a similar relaxation of the English tariff. Hitherto France had absolutely declined to take many kinds of imports, but by the terms of the Treaty all these were to be admitted on payment of a duty never exceeding thirty per cent. of the value of the goods, and a number of existing duties were to be reduced. The result was, in the first place, a great increase in the trade between England and France; and, secondly, the setting of an example which was speedily followed. The chief European powers bound themselves, by a variety of treaties, to modify their tariffs if the other contracting nations would make corresponding relaxations. Under the new system, international trade grew very rapidly. It is possible, however,

The Cobden Treaty, 1860.

Commercial Treaties.

that the treaties helped to fix in the popular mind that hostility to foreign imports which combined with financial difficulties to bring about a great Protective reaction which only England escaped.

The Gold Discoveries.

Some brief mention must next be made of the great discoveries of gold (California, 1848; Australia, 1851, etc.). The consequent revolution in the supply of gold may be realised from the fact that in the ten years 1841-50 the average annual production of gold in the world had been worth about seven and a half million pounds; but in the next ten years it rose to about twenty-eight million pounds. It naturally followed that the value of gold, in terms of most articles, rapidly fell, or, in other words, that general prices rapidly rose. This acted as a great stimulus to industry. But some classes of the community suffered severely. Those who had fixed incomes, derived for instance from preference shares, fixed dividends, or annuities, found that the old income would no longer buy the comforts to which they were accustomed. Moreover, many of those who, in the first instance, profited by the change, were tempted into extravagances which sometimes took forms permanently injurious to industrial efficiency. Accordingly we find that, from about 1860 the number of paupers began to increase, as shown by the following table:—

The Effects.

Pauperism.

ENGLAND AND WALES.

Year ending Lady Day.		Mean No. Indoors.		Mean No. Outdoors.		Total Mean No
1860	...	113,507	...	731,126	...	844,633
1861	...	125,866	...	758,055	...	883,921
1862	...	132,236	...	784,906	...	917,142
1863	...	136,907	...	942,475	...	1,079,382

The increase was even more rapid than that of the population. No doubt the Cotton Famine partly accounts for that of the later years. The American Civil War brought with it a blockade of the ports whence the materials for the staple trade of Lancashire had been chiefly exported (pp. 357, 796). This caused terrible distress; and though the brave endurance of the operatives, and a national subscription amounting in April, 1863, to upwards of two millions sterling, prevented the extension of pauperism which might have been anticipated, yet many trades suffered indirectly from the distress of Lancashire.

Others, however, were stimulated by the American War. It may be that the "good" times made Guardians more lax, and, at any rate, these years were exceptional. From 1864 the decline that had been going on under the new Poor Law was resumed; but it is at least curious that, even for these four years, rising wages and increased facilities for obtaining work did not prevent an increase of pauperism.

If we try to summarise our industrial history for the period

THE COTTON FAMINE: DISTRIBUTION OF CLOTHES TO OPERATIVES, MANCHESTER.

(*By permission of the Proprietors of the "Illustrated London News,"* 1862.)

dealt with in this chapter, we must still give the first place to the increase of population, and the still greater increase of wealth. In Ireland, indeed, the potato failure started that flow of emigration which has gradually reduced the population of the sister island from over eight millions to under four and a half millions. But the increase in the other parts of the United Kingdom more than balanced the decrease; and the continued improvements of machinery, combined with the extension of production on a large scale, caused great accretions of wealth. We must notice, however, that the industrial revolution had now extended to the Continent, and that the

Summary.

railway expansion which, in England, was most striking in the years 1844 and 1845, was now specially affecting the other countries of Europe and the United States, and had, by the latter part of our period, reached India and other regions which were in a more backward industrial stage. The telegraph, also, was rapidly becoming a most important factor in industry and commerce. The Crimean War, the Indian Mutiny, and the American Civil War must have somewhat hindered the accumulation of wealth, even when they gave a temporary stimulus to trade. Financial crises brought ruin to many, but the favourable forces were so strong that the destructive influences of over-speculation and panics did not prevent continued material progress. Of these favouring forces the gold discoveries were hardly less important than the mechanical improvements and the more efficient organisation of manufacture. Next to these we must put Free Trade; but to those who care more about the distribution of wealth than about its production, and who attach more importance to the physical, moral, and intellectual qualities of the people, than to the multiplication of their comforts and luxuries, the foremost place must be given to the growing power of trade unions, the improvements in factory and mining laws, and the beginnings of modern sanitary legislation. The English working classes were now reaping the fruits of the legislation of 1833 and 1834, as well as of the improvements made during the period dealt with in this chapter; and they were also discovering how much they had it in their power to do by their own efforts.

MARY BATESON. Social Life: The Theatre, 1815-1885.

From 1815 to 1843, when the new Act regulating theatres was passed, war was continuously waged on the patent rights of Covent Garden and Drury Lane, whose prescriptive right to perform the "legitimate drama" was enforced by the Lord Chamberlain under the Act of 1737. Certain exceptions were allowed; for instance, "legitimate" at the Haymarket in the summer months, musical performances at the Lyceum and St. James's (then the Prince's), burlettas at the Olympic and the Adelphi. *Othello* was converted into a musical performance by striking a few chords behind the scenes at frequent intervals;

five pieces of vocal music in each act made a play "burletta" beyond risk of contention. The result of the law was to discourage the performance of the plays of all the greatest English playwrights; for people would not go to Covent Garden and Drury Lane to hear them—indeed, they could not hear them if they did go, for the new school of actors had not voice enough to fill large houses that had been well suited to the powerful declamatory style of the elder Kembles. The law was openly defied by the Strand Theatre, and a number of large theatres outside the limits of Westminster existed on sufferance. The two great houses ruined the managers, and their rights could not be enforced in the law courts, for public opinion was too strongly against them. After 1832, when a Parliamentary Committee was held to consider what change in the licensing laws was possible, the minor theatres encountered no further difficulty.

The Great Tragedian.

The beginning of our period was the end of the old style. Mrs. Siddons made her last appearance in 1812, appearing only for a benefit in 1819; J. P. Kemble made his last appearance in 1817. From 1818 to 1833 may be dated the period of Edmund Kean, the first period of Macready, and the entertainments at the Lyceum by the elder Mathews. Those who saw the acting of Kean ascribe to him pre-eminently the quality of inspiration. He had intensity by nature, whereas Macready's motto was "Patience is genius." Macready, by mere force of his massive physique, was passionate, whereas Kean showed more of the intellectual aspects of passion. Macready's masculine energy, his "Homeric" quality, as Mr. Westland Marston describes it, contrasted strongly with the graceful charm of his contemporary, Charles Kemble, whose Hamlet, Mercutio, Orlando, Benedick, best displayed his talents. With less pomposity and more of natural sentiment, he succeeded best where Macready was least successful.

Famous Plays and Players.

The 'thirties date the opening and closing of many famous theatrical careers: Charles Young is last heard of in 1832, Edmund Kean in 1833, Charles Kemble in 1836, Liston in 1837. From 1837 dates the second period of Macready, which covers his career as a manager, with many failures, first at Covent Garden, then (1841) at Drury Lane. The 'thirties saw Fanny Kemble's efforts to support her failing father, and Helen

Faucit's first appearance, with those of Phelps and the younger Mathews. The fashion for inflated rhetoric showed very little tendency to wane. The great plays were Sheridan Knowles's *Virginius* (1820), *The Hunchback* (1832), *Love* (1839), in which Ellen Tree (Mrs. Charles Kean) had great success. The piece ran for fifty nights, which was then considered extraordinary. Bulwer's *Lady of Lyons*, threatened at first with failure, ran

EDMUND KEAN, BY J. S. STUMP.
(*National Portrait Gallery.*)

thirty nights in its first season, and was accounted a great success, for twelve or fourteen nights were more usual runs. Talfourd's *Ion*, Byron's *Marino Faliero* drew well; in 1840 *Money* came out, and showed that high-flown sentiment was still in vogue. What was sometimes wanting in quality was made up in quantity: the bill consisted of either two five-act comedies, or a tragedy preceded by a farce and followed by a three-act comedy.

The legitimate drama entered upon a new era when Samuel

THE TRIAL SCENE IN *HENRY VIII.*, BY F. LLOYD.

(Keene Collection, Victoria and Albert Museum.)

Phelps, with Mrs. Warner, took the management of Sadler's Wells, Islington. Phelps followed the methods of Macready, but had not his vigour. Phelps, however, believed himself to be the apostle of a cause—so Mr. Marston calls him—and as such the public willingly accepted an education at his hands. He could act parts of every description, and appeared in at least thirty Shakespearian characters. Though he never excelled by force of inspiration of passion or sentiment, he knew his audience, and delivered his words slowly and audibly, making little of himself and everything of his author. In eighteen seasons he produced thirty-one of Shakespeare's plays, free from eighteenth-century "improvements," and further revived many plays of the seventeenth and eighteenth century classics. The literary world went nightly on pilgrimage to "the Wells," Islington. Nearer home, Charles Kean, as manager of the Princess's from 1850, was doing similar work. He rejected the theatricality and point-making of his predecessors; and though he failed sometimes in tragic power through his eagerness to represent rather the quietude of nature, he educated people to appreciate more refined methods. He cared much for historical accuracy; his pageants, dresses, and scenery, to which Stanfield brought his artistic skill, surpassed the efforts of his predecessors. This was the period of dramatised versions of Dickens's novels, of Buckstone's *Jack Sheppard*, of Boucicault's *London Assurance*, and of some of the best known plays of Tom Taylor and Charles Reade. The Legitimate Drama.

In 1841 Rachel had shown London the best traditions of the French classical drama, and people were reading Racine as something more than a painful school task or study in literature. In 1857 came Ristori, and those who had seen Rachel found it hard to choose between them; Marston thought Rachel the more grand and terrible, Ristori the more human, with more power to excite pity and compassion in such a part as Phèdre. In 1857 her Lady Macbeth, in Italian, was the world's talk. The American actress, Charlotte Cushman, who acted Romeo to her sister's Juliet, in 1846, and the French actor, Fechter, had qualities of the greatest tragic power. In 1855 the periods appear to divide again. In that year William Farren, the elder, retired, and with him the stage lost the best player of Sir Anthony Absolute, Sir Peter Teazle, and the courtly gentle-

man of the last century. In the following year Ellen Terry made her first appearance, under Kean's management, in a child's part. With the 'sixties begins the period of Robertson's plays: *David Garrick*, *Society*, *Ours*, *Caste*, *Play*, and *School*; of H. J. Byron's management of the Prince of Wales's Theatre, formerly the Queen's; of the first important appearances of Mr. Bancroft,[1] Mr. Hare,[1] Mr. Irving,[1] Mrs. Kendal, and Mr. Wyndham.[1] In 1875 H. J. Byron gave to the Vaudeville

SCENE FROM *OURS*, AT THE PRINCE OF WALES'S THEATRE.
(*Reproduced, by permission, from the "Illustrated London News,"* 1866.)

Theatre *Our Boys*, which ran for more than four years. For a time English dramatic invention, except in melodrama and farce, seemed at a standstill.

Fashionable Manners.

In 1833 a new social excitement was the bazaar. One of the first, held to aid foreigners in distress, is described by Greville as like a masquerade without masks, everybody talking to everybody, whether already acquainted or not. The bazaar developed the female passion for "fancy work," and for imitating legitimate arts in inappropriate materials. Leather was cut to appear like wood-carving; potichomania had its victims, who spent their days in fastening pieces of cut paper on to vases

[1 Afterwards knighted.]

INTERIOR OF HER MAJESTY'S THEATRE: CLOSE OF THE SEASON OF 1841, FAREWELL OF MLLE. RACHEL, BY E. L. LAMI.

(Victoria and Albert Museum.)

and painting them with glaze. In more serious circles electric experiments were a favourite pastime, and animal magnetism, neuro-hypnotism, electro-biology were words in every cultured person's mouth. The kaleidoscopes, aërostation, aërial ships, diving-bells of 1820, had been displaced as interesting topics of conversation by mesmerism, clairvoyance, clairaudience. Modern spiritualism came to England from America in the early 'fifties, and the literary and fashionable world found in the séances of D. D. Home and other mediums an all-absorbing interest. Lord Lyndhurst, Sir E. Bulwer-Lytton,[1] Mr. Monckton Milnes,[2] Lord Lindsay,[3] Lord Adare, Mr. (afterwards Sir) William Crookes, Dr. Alfred Russel Wallace, the Trollopes, the Howitts, Mrs. Browning, Mrs. S. C. Hall, Dr. Gully, of Malvern, are among those whose names occur in the literature of spiritualism.

Newspapers.

The object of the stamp duty on newspapers had been partly to raise money, but also to keep periodical literature for the moneyed classes, and out of the hands of those who, writing for the poor, might pander to the democratic and revolutionary fancies of the populace. It was, however, always possible to evade the duty, and Cobbett, by having no news in his paper, was able to reduce the price of his *Weekly Register* from 1s. 0½d. to 2d., and thereby obtained an enormous influence. Irregular publication also exempted from duty, and as convictions were found powerless to stop the circulation of unstamped papers, a vast number were in circulation at 1d. or 2d. each. These pirate papers were generally inferior in quality, and it was seen that the effect of the stamp duty was injurious in that it cut off the poor and ignorant from the best sources of information. The annual cost of a daily paper to a subscriber was, in 1818, £10, and even the well-to-do combined to reduce the expense. Agents circulated them at 1d. an hour, and when they were "a few days old" they were sent to provincial towns and through the country at reduced prices. Whilst the stamp duty stood at 4d. the issue of stamps to British newspapers was, in 1835, not quite 33,000,000 for a population of about 25,000,000. Next year the tax was reduced

[1] The first Lord Lytton. [2] Lord Houghton.

[3] Afterwards Earl of Crawford and Balcarres. The theft of his dead body, probably for ransom, in 1881, and its recovery some years afterwards, constituted one of the most curious chapters in nineteenth-century criminology.]

to 1d. the sheet, and the duty on paper was also reduced. The yield rose, and in 1843 the issue of stamps was about 56,500,000, at the time when old-established papers were selling at 5d. instead of 7d. each. In 1853 the duty was reduced to 1d., and in 1855 it was abolished, together with the advertisement tax, which had been at the rate of 3s. 6d. each. The chief London dailies in 1835 were the *Times*, *Morning Chronicle*, the *Standard* (an evening paper till 1857), *Globe*, *John Bull*, the *Morning Post*. The *Courier* no longer held the position as an evening paper which it had kept during the war, with a daily circulation of 10,000.

The "Times."

In 1814 the *Times* began to be printed by steam, and instead of producing 450 copies in an hour produced 1,100 sheets. By 1836 this number was again more than doubled, while in 1884 22,000 sheets were produced in the hour. In 1816, when Barnes began to edit the paper, the circulation averaged only 5,000 copies; each copy consisted of one sheet of four pages. By 1834 the circulation had doubled, and its influence on public opinion was very great. Barnes was for the Reform Bill, and was called a "desperate Radical"; but afterwards Brougham and he parted company, and the tone of the leading articles, an enormous number of which were of Barnes' writing, was changed. In 1841 he was succeeded by Delane, who, though he was no writer, was able by means of his social gifts to make a position in society and in politics which no journalist had before attained. In 1828 it had been thought odd that the Lord Chancellor should have the editor of the *Times* to dinner; but in Lord Palmerston's time a close alliance was formed between the Ministry and Delane. Both Barnes and Delane seized readily on any available means to obtain information rapidly, and before the days of rail and telegraph performed marvellous feats with their expresses. In 1834 Barnes got news from Glasgow, which was brought by horses posting 400 miles at an average rate of fifteen miles an hour. By 1854 the circulation of the *Times* far exceeded that of all the principal dailies; it stood at nearly 52,000 when the *Morning Advertiser* stood at near 8,000, the *Daily News* over 4,000, the *Morning Herald* near 4,000, the *Morning Chronicle* and *Morning Post* near 3,000. In 1884 the least daily issue of the *Daily News*, *Daily Telegraph*, and *Standard* exceeded 170,000.

The *Morning Chronicle*, in spite of its small circulation, had

Other Papers.

a high reputation under the editorship of James Perry (1789–1821). Perry was the first to introduce shorthand reporting of Parliamentary speeches, and was thus enabled to print in the morning the speech of the previous night. The *Morning Post* was remarkable for its poetry, and it was here that Wordsworth published his sonnets, while Moore, Southey, and Young also wrote for it. The London daily press had among its contributors Lamb, Leigh Hunt, Hazlitt, S. T. Coleridge, T. Campbell, James Macintosh, Dickens, and a host of other famous writers. It would appear that journalism was then less professional and more literary in its character than it is now, but the result probably was that a less uniformly good level was obtained. There was, perhaps, more distinction and variety of style than is now suffered, but the average was lower, and one piece of brilliant writing went to make up for much of inferior quality. The news which each paper nowadays has to announce is as a rule the same; in former times there was more scope for extraordinary feats of editorial activity in capturing news; now more care is taken as to the form in which it is presented. In 1834 not a single provincial town in England issued a daily paper. Liverpool and Canterbury alone issued papers more than once a week. In 1855 the total of provincial papers for the United Kingdom was 560, in 1883, 1,576, of which 162 were dailies. But the growth of the newspaper press in England is very small compared with the growth in the United States; it appears, however, that English taste in journalism follows, though slowly, upon American models. It would seem that humanity develops new instincts and new desires according as invention suggests them and provides facilities for satisfying them. The desire to read much about events or about persons, the wish to have or to send news, was not felt when it could not be gratified; and now, with the means to quench it, has been raised an as yet unquenchable thirst. The mischief, if mischief it be, is all due to steam; neither the abolition of stamp taxes nor all the administrative reforms of Rowland Hill could have created these monster needs, for they could not have satisfied them. Steam has shown how impossible it is to lay down any law concerning what is necessary for the happiness of humanity.

JAMES COLVILLE. Scotland.

The Potato Famine.

Pauperism.

Social Reform.

THE failure of the potato produced widespread destitution, aggravated by long-continued trade depression. Following this drain on the resources of the community came "the malignant fever" of 1847, decimating the ranks of the unemployed poor. The mortality of Glasgow for the year was hitherto unprecedented in any British community. The cost of poor relief rose, 1843–48, from over a quarter of a million a year to more than double. But it was in the Highlands and the Isles where the pinch was most keenly felt. There the economic crisis was aggravated by over-population, a vicious land system, and an uncertain climate. Emigration had long been checked through the easy sustenance of the potato and the profits of kelp-burning, an industry which collapsed after 1851 through chemical discovery and the change of import duties. The crofter system, which came in the wake of the sheep clearances, fostered unwise subletting and the squatting of a needy crowd of dependants without regular employment, landless, and ignorant. The Relief Committee, reporting on a large district in 1849, found a third of the population dependent on their crofter neighbours, little better off than themselves. The benevolent in the larger towns, the clergy of all denominations, and the Highland landlords made heroic efforts to cope with the distress. All over the country the growing mass of unemployed, due to the stagnation of trade (1849) that followed the famine, and the collapse of credit in 1848, put a great strain on the new Poor Law. There was, therefore, not a little agitation for the enactment of a legal claim for relief to the able-bodied but unemployed poor as in England. But even without this the registered poor were nearly doubled in numbers during this period. The ratio they bore to the whole population was 3·85 per cent. (1847–67), afterwards reduced to 2·2 (1871–91). To these results the reluctant resort to the workhouse test, characteristic of Scotland, contributed not a little.

Contemporary observers were of opinion that more harm than good was done by the liberal charity which the economic crisis elicited. Elementary education was still in a deplorable condition. Government, too, became alarmed in 1856 at the amount of the education vote, which had risen in a few years from £60,000 to £500,000. The State was now assuming responsibility for the education of juvenile criminals, giving a great impetus to that industrial school movement which Dr. Guthrie's "Plea for

Ragged Schools" (1847) inaugurated. He was a moving spirit in the Association for the Suppression of Drunkenness (1850), the outcome of which was the Forbes-Mackenzie Act (1853). It effectually cleared the streets of nocturnal and Sunday revelry, so that it would be hard to name an Act which has done so much for social reform. City Corporations were awakening to a higher sense of duty towards the helpless classes. Glasgow's first Extension Act (1846) took in a crowd of squalid villages on the borders of the old parliamentary area, leading speedily to the introduction of Loch Katrine water (1859) and the creation of the City Improvement Trust (1866). Private enterprise, anticipating the wants of the extended area and changes of social customs, gave Glasgow her first supply of city 'buses, developed from modest beginnings in 1846 to a complete system in 1850.

Ship-building.

The high position of Clyde shipbuilding dates from Robert Napier's success with the first four Cunarders (1840). When Samuel Cunard failed to find support in the South for his mail scheme, he betook himself to Glasgow, where, with the commercial help of George Burns, and the engineering skill of Robert Napier, it was at length fairly launched (p. 459.) The subsequent steps in progress were worked out here also—substitution of iron for wood and the screw for the paddle, along with those improvements in boilers and engines which made steam available and economical for ocean sailing. Kincaid of Greenock, after experiments dating from 1828, succeeded in 1840 with a four-bladed screw-propeller, but not till 1850 could the Clyde claim her first screw-steamer (p. 180). About 1858 iron and the screw took a permanent place. To the close of the Crimean War belongs the first general use of iron in warships (p. 178). The *Black Prince*, an ironclad built at Govan in 1860, ushered in the long series of Clyde-built additions to our fleet. The famous engineers, Randolph and Elder (afterwards John Elder and Co.),[1] of Fairfield-on-Clyde (1852), applied their exceptional skill to that economy of fuel and efficiency of steam propulsion which have made the Atlantic Ferry what it is. The first warship supplied with their notable invention, the compound engine (pp. 460), was strikingly successful on trial (1865).

The period was remarkable for the part played by chemistry in

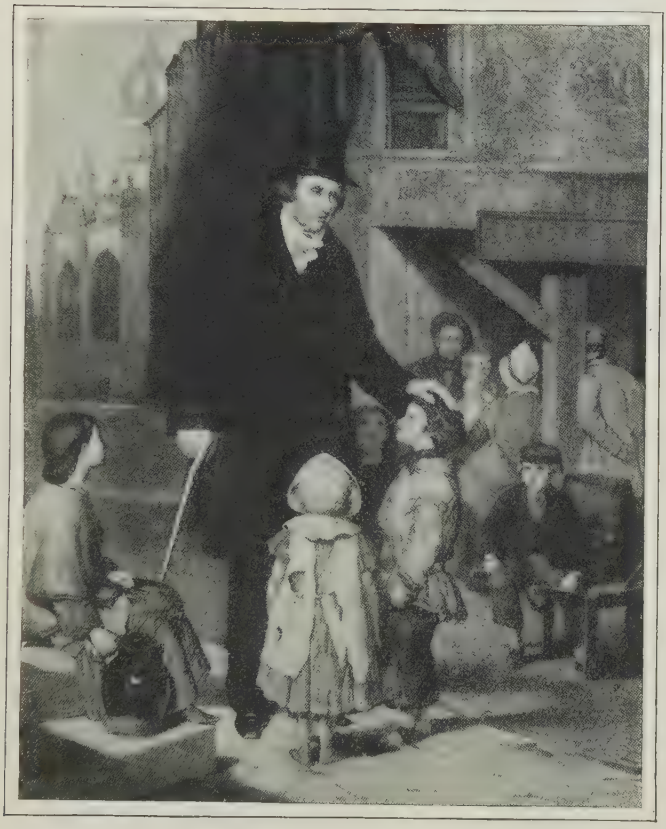
[1 Now the Fairfield Shipbuilding and Engineering Company.]

THEIR ONLY HARVEST, BY COLIN HUNTER, A.R.A.

(National Gallery of British Art.)

the arts. The manufacture of bichromate of potash, used as a mordant in dyeing, was so highly developed at Shawfield, near Glasgow, that the output here soon equalled that of all the kingdom combined. The shale-oil industry, again, owed much to the

New Industries.



DR. GUTHRIE AMONG THE STREET ARABS OF EDINBURGH.
(*From the engraving by J. Le Conte. After James Edgar.*)

technical education of the Glasgow Andersonian College, for here Young worked and studied under Thomas Graham. Finding the bituminous coal of Boghead, near Bathgate (1850), rich in oil, Young established there a vast industry. Paraffin had been discovered (1830) independently by Reichenbach and by Christison of Edinburgh. To the early studies of the latter

(1818) was also due the application of naphtha as the best solvent of india-rubber. But Macintosh of Glasgow and Hancock of Liverpool stepped in here, and reaped all the honour and profit. Large rubber (1855) and vulcanite (1862) works were set agoing in Edinburgh. Floor-cloth making was successfully established in 1847 at Kirkcaldy, and this, the cradle of the industry, is still without a rival in the trade.

P. W. JOYCE. Ireland.

AFTER the proclamation of the Clontarf meeting in 1843 (p. 338) there was a serious split in the Repeal party. The younger men grew tired of O'Connell's method of peaceful constitutional agitation, as leading to nothing; stronger views began to prevail among them; and a number of them—all men of great ability and of the highest character—seceded and formed what is known as the Young Ireland party. O'Connell had mainly worked for and by Catholics, but these men entered on the task of uniting the whole of the Irish people of all religions in one grand organisation. Their organ was the *Nation*, a weekly paper, founded by Thomas Davis, a Protestant, and by Charles Gavan Duffy and John Blake Dillon, two Catholics. Meantime the famine came; O'Connell died; and in 1848 the Young Ireland party sprang at once into great prominence. The *Nation* continued to be conducted with great literary ability; but several other papers of a much more violent character were started by men of more advanced opinions, conspicuous among whom was John Mitchel, a Unitarian, the most powerful and daring writer of them all. At last, in 1848, the Government issued a number of warrants; and there was an abortive rising under William Smith O'Brien, Dillon, Thomas Francis Meagher, and others. The leaders were nearly all arrested and sentenced to various terms of penal servitude. It may be said that this brought to a close the brilliant and brief Young Ireland movement.

"Young Ireland."

The Land War.

The land troubles inherited from the bad old times of the Plantations reached an acute stage in the years following the famine. Those of the tenants who survived that calamity came out of the trial utterly impoverished; the landlords pressed for impossible rents, and evictions came by the thousand. In Ireland, as a rule, the tenants made all the farm improvements:—changing moorland into arable, building, draining, fencing, sub-

soiling, and so forth; the landlords, with rare exceptions, did nothing. Accordingly, in almost all cases of eviction, the tenants had to leave behind them the results of the labour of a life, which formed the best part of their capital. There was much resistance, but it was in most cases in the shape of secret outrage. Thus the bitter land war went on; and for ten years or so after the

WILLIAM SMITH O'BRIEN.
(*From a miniature, by permission of D. O'Brien, Esq.*)

famine Ireland was one of the most perturbed and most miserable countries on the face of the earth.

Encumbered Estates Act.

A large proportion of the landlords as well as of the tenants had been ruined by the famine, and their estates were heavily mortgaged. To relieve these by enabling them to dispose of their property, the Government, in 1849, instituted a court in Dublin to facilitate the sale of encumbered estates. The Act was purely in the interest of the landlords, and no thought was taken of the tenants. The purchasers bought the estates as they stood, including the tenants' permanent improvements, which were all confiscated by becoming the property of the new landlords. In 1850 a Land League was formed in Ireland with the

object of forcing the Government to pass some measure of relief; and several Bills were introduced from time to time, which came to nothing. In 1860 the Government passed a Bill by which all improvements made by the tenant were secured to him, provided they had been made with the consent of the landlord; but the landlords never gave consent, and this Bill turned out quite ineffective. Meantime it soon appeared that under the operations of the Encumbered Estates Act the state of the country became worse than before. The new proprietors were generally men who had purchased as a speculation—merely to make money—having no knowledge of the tenantry and no sympathy with them. Rents were very generally raised; there was a resurgence of evictions, resistance, outrages, and emigration; and the peasantry continued to disappear from the face of the country.

Photo: W. Lawrence, Dublin.
T. F. MEAGHER.

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Sir Spencer Walpole, *History of England from* 1815 and *History of Twenty-five Years* (from 1856); Justin McCarthy, *History of Our Own Times;* H. W. Paul, *History of Modern England* (1904); Fyffe, *Modern Europe;* A. Debidour, *Histoire Diplomatique de l'Europe;* Kinglake, *History of the Russian War;* Histories of the Indian Mutiny by Malleson and Holmes; Bosworth Smith, *Life of Lord Lawrence;* Sir T. Martin, *Life of the Prince Consort;* Dalling and Ashley, *Life of Palmerston;* Sir Spencer Walpole, *Life of Lord John Russell;* Sir A. Gordon, *Life of Lord Aberdeen;* Morley, *Life of Cobden*, Greville, *Journals;* Count Vitzthum, *St. Petersburg and London;* Lord Malmesbury, *Memoirs of an Ex-Minister;* Ashwell and Wilberforce, *Life of Samuel Wilberforce;* Davidson and Benham, *Life of Archbishop Tait;* Hodder, *Life of Lord Shaftesbury; Letters* of Lord Blachford; Sir A. Taylor, *Autobiography;* Sir Wemyss Reid, *Life of Lord Houghton;* Count Beust, *Memoirs;* Bianchi, *La Politique du Comte Camille de Cavour.*

SPECIAL SUBJECTS.

The Army, The Navy, The Church.—*See* chap. xxiv. *Literature.*—*See* chap. xxi.

Art, 1846–1885.—There is no complete, competent, and comprehensive history of art as it existed in England during the period in question. The nearest approach to a work of the sort, which, nevertheless, does not cover all the ground, is S. and R. Redgrave's *Century of Painters*, while some of C. R. Leslie's Essays, being pregnant of knowledge, thought, and fine taste, are invaluable as regards the principles and technique of art. The criticisms published in the *Builder*, the *Athenæum*, and several similar journals are the most trustworthy. To these may be added many excellent papers by P. G. Hamerton and others in the *Portfolio.* Among the numerous recent biographies of artists may be mentioned Hamerton's and Thornbury's *Lives* of Turner; O'Driscoll's *Maclise;* C. R. Leslie's *Autobiographical Recollections;* Gilchrist, *Etty* and *Blake;* F. G. Stephens, *Landseer* and *Mulready;* Armstrong, *Sir Frederic Leighton*, *Briton Rivière*, and *Sir John Millais;* Layland, *Charles Keene;* the various biographies of Dante Gabriel Rossetti, by W. M. Rossetti, J. Knight, Hall Caine, J. Sharp, and F. G. Stephens; Story, *John Varley* and *John Linnell; G. E. Street*, by the architect's son; H. Palmer, *S. Palmer* and *Joseph Wolf;* Dr. Solly, *David Cox* and *W. Müller;* and the *Autobiographies* of Messrs. Cope, S. Cooper, Frith, and Haydon. Works on Art, as such, are not reckoned here.

Philosophy.—Besides the works of the writers referred to, the *Histories of Philosophy* of Ueberweg and Erdmann, the *Dictionary of National Biography*, the *Encyclopædia Britannica*, and obituary notices in *Mind*, may be consulted for dates and bibliographical details.

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Medicine and Economic History.—See chap. xxi. *Social Life, etc.—See* chap. xxii.

Scotland, 1815–1885.—*General and Political:* Cockburn, *Memorials of his Time* (1856); *Journal* (ends 1859); *Lives* of Jeffrey (1852), Adam Black (1885), and Duncan Maclaren, M.P. *The Church Question.*—Buchanan, *Ten Years' Conflict* (1849); Hanna, *Life of Chalmers* (1849–52); Bayne, *Life and Letters of Hugh Miller* (1871); Story, *Life of Story of Rosneath* (1862) and of *Rev. Dr. Lee* (1870); Macleod, *Memoirs of Norman Macleod;* Mrs. Oliphant, *Life of Principal Tulloch. Social and Economic Condition.*—Dr. Chalmers, *Christian and Civic Economy of Large Towns* (1821); *New Statistical Account of Scotland* (15 vols., 1845); Alison, *Management of the Poor* (1840); Fraser, *Life of David Stow* (1868); Miller, *Schools and Schoolmasters* (1855); Guthrie, *Plea for Ragged Schools* (1847); *Report of Relief Board on the Hebrides* (1849); Lamond, *Poor Law* (1891); Cockburn, *Circuit Journeys;* Peter Mackenzie, *Reminiscences* (1865). *Industry.*—Bremner, *Manufactures of the West of Scotland* (1876); Bruce, *Life of William Denny (Marine Engineer) One Hundred Glasgow Men;* Deas, *The Clyde* (1873); Miller, *The Clyde from Source to Sea; Report of the Crofter Commission* (1884); Duke of Argyll, *Crofts and Farms in the Hebrides* (1883); *Scotland as it Was and Is* (1887); Acworth, *Railways of Scotland* (1890). *Manners and Incident.—Autobiography of Mrs. Fletcher* (1770–1855); Norton, *Early Letters of Carlyle; Lives* of Dr. Thomas Guthrie (begins 1863) (1874), and Sir Robert Christison, M.D. (1794–1874); Mrs. Oliphant, *Edward Irving* (1862); Mrs. Gordon, *Christopher North* (1862); Smiles, *Nasmyth;* E. Hodder, *Sir George Burns* (1890).

Ireland.—See chap. xxiv.

Photo: W. Lawrence, Dublin.

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